

Environmental Education Compendium for Integrated Waste Management and Used Oil

A Cooperative Presentation by:

The California Integrated Waste Management Board
and California Department of Education

2000
Second edition

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California Integrated Waste Management Board
California Department of Education

To the Educator

Dear Educator,

It is our pleasure to present the second edition of the *Environmental Education Compendium for Integrated Waste Management and Used Oil*, a cooperative project by the California Waste Management Board and California Department of Education. This second edition is the result of a new nationwide search for environmental education curricula published in the 1990's.

We recognize that educators face an enormous challenge in integrating environmental education into the classroom. While a great deal of material exists within the field of environmental education, some may not be readily accessible or may fail to meet the high standards established by the California education frameworks and content standards.

According to current educational theory, students make conceptual change only when they actively construct their own knowledge. This active learning takes place when students are engaged in research, discussion, exploration, and application. Students develop the skills to analyze diverse perspectives, apply their own knowledge, and develop strategies for responsible action. In the context of integrated waste management and used oil, it is hoped that students will become informed citizens who, as consumers, will make wise decisions regarding the consumption of natural resources, reduction in waste, and recycling and reuse of materials. You, as an educator, play a vital role in this process by including the study of integrated waste and used oil issues in your classroom activities.

This compendium is one in a series providing information on quality environmental education instructional materials. We are confident this *Environmental Education Compendium for Integrated Waste Management and Used Oil* provides you with educationally sound resources to instruct and empower your students as they examine waste-related issues from a variety of perspectives.

We offer this compendium to you and to the students of California.

Sincerely,

Bill Andrews
Education Programs Consultant
California Department of Education

Ralph E. Chandler
Executive Director
California Integrated Waste Management Board

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About This Compendium

INTRODUCTION

This compendium is an easy-to-use guide to environmental education materials focusing on integrated waste management and used oil. Interdisciplinary by nature, environmental education is appropriate in any subject area, and many educators often integrate environmental concepts into their lesson plans. Finding suitable materials, however, can be a time-consuming and complicated task. This compendium helps streamline the selection process by identifying and reviewing exemplary curricula that are appropriate for classroom use.

CONTENT OF CURRICULA

An extensive national search was conducted to locate teaching materials that focus on integrated waste management and used oil issues. Through this process, numerous areas of study were identified. For integrated waste management, these include the impact of waste on natural and built environments; source and waste reduction; recycling, reusing, composting, and vermicomposting; the role of consumers in the consumption of natural resources and generation of waste; the need for conservation; and the impact of solid waste and pollution. For used oil, these issues include the role of consumers in the consumption of petroleum products; the finite, non-renewable nature of petroleum products; the impact of improper disposal of motor oil; and the recycling, re-refinement or re-processing, and reuse of motor oil.

In California alone, several new publications have emerged in the past five years. Mandated by legal requirement with the passing of the California Integrated Waste Management Act (Assembly Bill 939) and faced with the problematic reality of landfill closures, many government agencies have looked toward education as a vehicle to raise the public's awareness of the need to reduce waste. A new waste management hierarchy has been established, with source reduction, or waste prevention, as the first priority, recycling and composting as the second, and landfilling and transformation as the third, and last option.

For a majority of the curricula reviewed, lesson plans are organized around the concept of a waste hierarchy. The need for reducing, reusing, and recycling is examined within the context of conserving natural resources and diverting materials away from landfills. Through readings, discussions, and activities, students' awareness of solid waste is enhanced by knowledge of environmental implications. In many cases, this knowledge, in turn, is applied to school and community action projects. Conducting a classroom or campus solid waste audit, initiating a schoolwide recycling or cafeteria composting project, or launching a "buy recycled" campaign project are examples of the types of project-based learning proposed in recently published curricula.

A second area of study focused on used oil, chosen due to its applicability to discussions on recycling. Viewed as both a hazardous waste and valuable resource to recycle, used motor oil is emerging as a critical environmental issue – particularly relevant to secondary level students who are learning to drive and maintain automobiles. Recycling is the only environmentally safe and legal method to dispose of used oil; its improper disposal, including dumping it into storm drains or pouring it on the ground, can result in contamination of drinking water, fouling of sewage treatment processes, and long-term health effects in freshwater and marine organisms. In spite of the environmental implications and legal mandates, used oil continues to be improperly disposed. In a recent study by the American Petroleum Institute, eighty-two percent of the states reporting indicated that lack of public education is a major reason why "do-it-yourselfers" (those who change their own oil) do not participate in used oil collection/recycling programs. Through an exhaustive search for used oil education materials, however, only seven curricula were identified, three of which were developed in California.

About This Compendium

I recognize the right and duty of this generation to develop and use our natural resources, but I do not recognize the right to waste them, or to rob by wasteful use, the generations that come after us.

– Theodore Roosevelt, 1900

EVALUATIONS

On the following pages, both descriptive and evaluative information on each curriculum are presented. Evaluation scores are based on statistical means derived from these data. Two sample pages are featured from each curriculum. Due to the length of some lessons, only a portion of the sample lesson may be provided. Each evaluation includes a description of the curriculum, ordering information, a “report card,” discipline emphasis, and brief comments from evaluators. Exact quotes from the reviewers are given quotation marks. General comments are not given quotation marks.

REVIEWERS

The curricula were evaluated by two teams of educators from throughout California. One team represented southern California; the other northern California. These educators were chosen on the basis of their extensive environmental education experience and expertise, as well as background in the topic area, state education frameworks, and standards. This distinguished group of evaluators has provided an important service to everyone associated with curriculum development and instruction related to environmental education.

MATERIALS

The curriculum materials were evaluated with the use of an evaluation tool developed by the California Department of Education in collabora-

tion with other state agencies. The goal of this evaluation was to identify those curricula that align with California education frameworks and standards and present accurate and comprehensive issues related to the topics of integrated waste management and used oil.

Curricula were evaluated for appropriateness at four grade-group levels: K-3, 4-6, 7-9, and 10-12. Each piece was evaluated by a team of educators with teaching experience at the target grade-group level. Multi-level curricula were evaluated at each grade level that they encompassed, resulting in some curricula being evaluated at four grade-group levels.

Each curriculum described in this compendium received an overall grade of B- or above. These materials are highlighted in the main part of this document. Supplemental materials not deemed curricular in design are listed in the appendices, along with other resources.

For ease of use, the main body of the compendium has been divided into the four grade-group sections. Curricula are arranged within each section by rating; those with the highest ratings are listed first. Some curricula appear in more than one grade-group section. Because of the small number of used oil curricula, they are arranged in only one section, with the highest ratings per grade-group appearing first.

APPENDICES

Included in the appendices are a description of the Curriculum and Compendium Project coordinated by the Office of Environmental Education within the California Department of Education; the Unifying Concepts for Environmental Education; the Conceptual Matrices for Integrated Waste Management and Used Oil; correlations of the Conceptual Matrices to seven California education frameworks, four California education content standards, and the California Education Code; the evaluation tool; and listings of supplemental materials, software, and internet addresses for on-line information about environmental education, integrated waste management and used oil.

Significant Findings

FUNDING

This project was funded by the California Integrated Waste Management Board and California Department of Education's Environmental Education Grant Program.

CONCLUSIONS

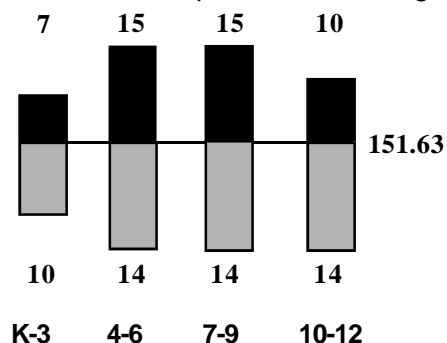
While this compendium was developed to reveal the strengths and weaknesses in existing curricula, it was also intended to serve as a guide for future curriculum development. The project identified several outstanding curricula; however, even some of these materials could benefit from further refinement, particularly in terms of ease of use in the classroom.

Three conclusions have been drawn from the review process: (1) in a manner similar to most of the other five compendia, the greatest number of curricula exists for the 4-6 and 7-9 grade-group levels, and the smallest number of curricula are found at the K-3 grade-group level; (2) recently-published curricula provide more opportunity for direct student involvement in waste audits, community outreach efforts, and recycling/composting programs at home and on campus; and (3) due to the structure of the evaluation tool, curricula covering a wide range of environmental topics may not have scored as high on specific content as those focusing exclusively on integrated waste management or used oil issues. This is not meant to imply that such curricula are inadequate, but only that they may not cover the specific subject matter of this compendium thoroughly.

It should also be noted that the topic of hazardous waste was not explored in this new compendium. Consequently, materials with a predominant emphasis on hazardous waste, household hazardous waste, and toxics have not been reviewed for inclusion in this document.

Lastly, this compendium is intended as a tool for educators interested in exploring with students waste management issues including that of used oil. Such an effort would promote acknowledgement of our consumption of natural resources, an understanding of strategies and reasons to reduce waste and recycle materials, and stewardship for the conservation of resources and protection of the environment.

One purpose of this review was to identify strengths and to reveal areas needing improvement in existing material to provide direction for the development of future curricula in the topic area. After a preliminary screening, one hundred twenty-nine pieces were submitted for formal evaluation, and of these, ninety-nine scored high enough for inclusion in this compendium. Findings are summarized below.



Each evaluated curriculum earned an overall score based on the evaluation tool included on pages 208-211. The number of points possible was 250. This graph displays the number of materials, by grade level, scoring above or below the average score of 151.63.

DEVELOPMENT

Twenty-one percent of the curricula was developed by private organizations and academic institutions; fifty-eight percent by county, state, or federal government agencies; and seven percent by county or state education offices. Several curricula are the outcome of academic alliances between universities and government agencies, resulting in publications that are pedagogically sound and backed by accurate and current topical information. The majority indicated classroom field-testing prior to publication and release of the material.

CONTENT

Many primary level (grades K-3) curricula examined individual components of waste management: the problem of litter, the value of recycling or vermicomposting, or accumulation of waste in the immediate environment of home or classroom. Used oil curricula are non-existent for this audience, and student action projects are limited.

Significant Findings

At the upper elementary level (grades 4-6), curricula tend to focus on the broader environmental consequences of waste generation and disposal. More involved community action projects appear, and in-depth analyses of economic, societal, technological, and health-related waste issues begin to challenge students to critical thought. Used oil curricula are still limited.

Intermediate and secondary level curricula provide further opportunity for multidisciplinary analyses of waste issues. Project-based learning is integrated in more recent curricula, allowing students to assume responsibility for their learning and their work in the resolution of “real-life” waste problems in the community. Because of relevance to driver’s education and automotive shop classes, the majority of used oil curricula are geared toward this age level.

A problem can occur, however, when a curriculum merges activities for grades 7-12 together. The cognitive abilities seen at the middle school level do not match those at the secondary level, and the result is often a disconnection between the realities of a classroom and the expectations of a lesson plan.

Another significant trend seen in the current compendium pertains to internet access. The appendices of numerous curricula reviewed for this study feature website addresses to encourage use of the internet for communication and retrieval of relevant information concerning integrated waste management.

GRADE LEVEL COVERAGE

Seventeen percent of the curricula examined were directed at grades K-3; twenty-nine percent at grades 4-6; twenty-nine percent at grades 7-9; and twenty-four percent at grades 10-12. The greatest percentages of high-scoring curricula (above the mean score of 151.63) were found at both the 4-6 and 7-9 grade levels. Conversely, the lowest percentages of high-scoring material were found at both the K-3 and 10-12 grade levels, a finding similar to that in the original *Compendium for Integrated Waste Management*. It should be noted that in each grade-group level, forty-eight to fifty-eight percent of the curricula scored below the mean.

PEDAGOGY

The majority of curricula presented developmentally appropriate activities and thought-provoking discussion material. The reconstruction of mini landfills, creation of compost jars and worm bins, and daily monitoring and sorting of classroom waste are some of the engaging lessons found within the material.

Older curricula tend to rely on completion of paper and pencil worksheets and fill-in-the-blank tests as assessment. Newer curricula tend to make use of authentic assessment tools such as entries in student journals, workbooks, and action plans for student projects. They also offer more opportunities for students to apply skills in real-life situations.

TEACHER USABILITY

Concern was repeatedly expressed regarding ease of classroom use of the curricula. Awkward binding, lack of reference to duration of activity, extensiveness of preparation effort, and cost of supplemental materials are perceived as potential barriers to use of the material.

MULTILINGUAL/MULTICULTURAL MATERIALS

Very few curricula feature sections that have been translated into Spanish. Some materials offer multicultural perspectives on environmental ethics, including the perceived value of land and the cost (aesthetic and otherwise) of its degradation through waste disposal and littering. Other materials explore the global implications of natural resource consumption and waste generation, comparing consumptive patterns between industrialized and developing nations.

VISUAL PRESENTATION

The majority of the curricula feature acceptable formats and graphic design. Commercially published material are often accompanied by posters and other visual aids, depicting the life cycle of a product or process of recycling. Binding, however, becomes an issue when document size is excessive or when papers lack binding altogether.

Field Guide to the Reviews

Each curriculum received an overall grade, as noted in the Report Card depicted below. This grade corresponds to the number of icons appearing above: 5 icons represent A+; 4 1/2 icons, A; 4 icons, A-; 3 1/2 icons, B+; 3 icons, B; and 2 1/2 icons, B-.

Publisher
Address
Phone Number

Cost, Date, Page Count

Description of material

REPORT CARD

Overall Grade

General Content

Presentation

Pedagogy

Teacher Usability

Integrated Waste

DISCIPLINE EMPHASIS 0 1 2 3

Science

History/Social Science

Health

Mathematics

Visual/Performing Arts

Language Arts

Industrial/Vocational Ed.

Foreign Language

COMMENTS

These comments reflect the evaluators' written responses on the narrative portion of the evaluation tool (see pages 208-211) and are categorized by topic. If there are no comments on a particular topic, the heading will not appear in the comments section. Comments that are direct quotes appear in quotation marks; others summarize the evaluators' notes and have been edited for clarity.

Evaluators were asked to indicate the degree of emphasis placed on each discipline. Results are reflected on this scale. Zero (0) indicates no emphasis, one (1) indicates some emphasis, two (2) indicates more emphasis, and three (3) indicates major emphasis.

Closing the Loop: Exploring Integrated Waste Management and Resource Conservation

California Integrated Waste Management Board
Public Education and Assistance Section
8800 Cal Center Drive, Mail Station #5
Sacramento, CA 95826
(916) 255-2385



No charge to California educators who participate in a workshop. 2000. 650 p.

Completely revised and updated in 2000, *Closing the Loop: Exploring Integrated Waste Management and Resource Conservation* applies K-6 level project-based learning to examine issues related to integrated waste management and resource conservation. In the K-3 module, twenty-three lessons are organized within five units entitled Conserving Natural Resources; Reducing, Reusing, and Recycling Classroom Waste; Vermicomposting; Proper Disposal of Waste; and Proper Management of Household Hazardous Waste. Extensive appendices include vocabulary lists, an overview of integrated waste management, an overview of the handling specific materials, information to establish composting systems, and websites.

REPORT CARD

Overall Grade	A
General Content	A+
Presentation	A-
Pedagogy	A
Teacher Usability	A
Integrated Waste	A+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a very current (1999) and comprehensive curriculum. Lessons are appropriate to students' lives."

Presentation

Draft edition without camera-ready format was reviewed for this project.

Pedagogy

"Strong language arts integration."

"Field testing is extensively documented."

"Lessons are age appropriate, highly engaging, and literature-based."

"Student investigations are quite effective."

Teacher Usability

"Lessons are lengthy and a lot of preparation time is needed."

"Very detailed directions and descriptions."

Specific Content

"This manual encompasses the entire waste management hierarchy."

"The appendix is detailed, listing many appropriate and helpful resources as well as additional background information."

Rethinking Recycling

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97204
(503) 229-5913



\$33.00 for entire curriculum and \$6.00 for video (no charge to Oregon educators).
1993. Packaged folder of materials.

Rethinking Recycling, an Oregon Waste Reduction Curriculum is a comprehensive package consisting of four grade-group levels of Classroom Activity Packets (K-2, 3-5, 6-8, and 9-12), a Teacher Resource Guide (63 p.), recycling and waste reduction booklet (18 p.), and video, "The Recycle Lifecycle of Glass." The Teacher Resource Guide provides background information, fact sheets, reprints of articles, suggested instructional methods, and lists of additional resources. At the K-2 level, the Classroom Activity Packet consists of twelve lessons and related handouts designed to make students aware of waste issues and take action to reduce the amount of trash they and their families produce.

REPORT CARD

Overall Grade	A-
General Content	B+
Presentation	B+
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This curriculum offers very straightforward and concrete lessons on recycling. Lessons are simple, yet spiral through awareness and understanding and lead to responsible actions that even young children can do to develop lifelong habits of sustainability."

Presentation

"Would like to see it spiral bound rather than loose within a folder."

Pedagogy

"Activities are very student centered, empowering them to change the way they and their families view and deal with consumption and waste."

"Some concepts may be too difficult for kindergarten students."

Teacher Usability

"The twelve lessons in each grade-group unit are very concise and teacher friendly."

"The beginning teacher could pick up this unit and use it easily."

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 569 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (K-8 edition) addresses numerous environmental issues, including the impact of litter and garbage, and the effects of recycling, composting, and conserving natural resources on both a regional and global level. Interdisciplinary lessons are divided by grade levels (K-1, 2-3, 4-5, and 6-8) and are supported by an extensive resource section covering background information, glossary, and a list of books and videos.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A very comprehensive curriculum."

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned.

"Nice format. Good student visuals."

Pedagogy

"The number of activities and their conceptual presentation create a storyline for K-3."

"Activities look fun and easy to follow."

"Nice extension activities."

"K-1 lessons are grouped together as are 2-3 lessons, making it easier for teachers to find appropriate material. Lessons are not inquiry-based, however, and they could use more opportunity for active learning."

Teacher Usability

"Excellent resource section" (bibliography of books, videos, periodicals, and glossary).

Specific Content

"This curriculum supplement was produced specifically for South Carolina."

Think Earth

Educational Development Specialists
5505 East Carson Street, Suite 250
Lakewood, CA 90713
(562) 420-6814



\$50.00 per grade-level unit. 1998. Packaged kit.

Think Earth is a complete instructional K-6 package that features a teacher guide, story cards, posters, practice cards, reproducible masters, and a seven-minute video. Each grade-level set of activities focuses on the conservation of natural resources and reduction of waste and pollution. The kindergarten unit introduces the concept of environment and encourages students to practice “think earth” behaviors, the grade one unit explores the use and conservation of natural resources, the grade two unit explores waste management, and the grade three unit addresses pollution issues.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

“In just five lessons, students understand the basic concepts of waste management.”

Presentation

The caricature of earth is anthropomorphic. “Graphically, a ‘sneezing’ earth equates to bad science.”

“Features colorful posters, story cards, and fun songs.”

Pedagogy

“Most learning sequences are based on videos and fill-in-the-blank worksheets.”

“Each grade specific unit is sequential and builds upon prior knowledge, yet can stand alone. Each unit focuses on specific behaviors that should emerge from the concepts and skills presented.”

Teacher Usability

“Story cards could be used to augment other curricula.”

“Several activities require extensive prior knowledge.”

“Nearly all the materials needed are included in the program.”

“Well-scripted materials!”

Pathways to a Sustainable Future

The Chewonki Foundation
485 Chewonki Neck Road
Wiscasset, ME 04578
(207) 882-7323



\$19.95. 1999. 198 p.

Recently revised, *Pathways to a Sustainable Future, A Curriculum Guide for Schools Exploring Waste Management Issues* presents several routes of exploration, from awareness pathways ("What is the waste problem?") to assessment pathways ("How are we doing?") to action pathways ("How can we have an impact on the waste problem?"). Designed for K-12 classrooms, the material offers background information, activities, and support material on composting, hazardous waste, recycling and reuse, source reduction, landfilling, and incineration.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Pathways* starts out with an engaging story. The creative activities that follow teach waste management concepts that connect to actions performed at home."

Presentation

Revised and reprinted in 1999.

Pedagogy

"Easily shows how lessons can be adapted to a variety of age levels."

"Activities connect awareness to action and build upon prior discoveries."

"Some of the K-3 lessons are too advanced and need more concrete examples."

Teacher Usability

"Time allotments are not indicated in the lessons."

"Background information is easy to read and understand."

"Novel approach to curriculum development, allowing the teacher to create the conceptual flow by choosing lessons from awareness, assessment, and action pathways."

A-Way with Waste

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue, SE
Bellevue, WA 98008



No charge. 1990. 574 p.

Quantities are limited. Permission is granted to educators to reproduce lesson plans from CIWMB masters for classroom use, provided credit is given to WSDE.

The third edition of *A-Way with Waste* offers a comprehensive collection of activities written for grades K-12. Eighty-six activities from the second edition are combined with over thirty new activities and presented in three sections: Solid Waste Management (including 3 subsections: Reduce, Recycle, Dispose); Hazardous Waste; and Waste and Water. Fact sheets and teacher background material introduce each section; a bibliography and glossary are provided at the conclusion.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a K-12 curriculum with primary lessons woven throughout."

Presentation

Nicely organized in one binder, "but unwieldy in size."

Pedagogy

"Assessment strategies are offered for each lesson."

Teacher Usability

"The guide is well organized and easy for teachers to use. Lessons connect for understanding."

"Lessons are listed alphabetically and referenced to grade level to expedite finding appropriate lessons."

Background information is limited.

Specific Content

A comprehensive curriculum covering numerous integrated waste management issues.

Environmental Protection Native American Lands

Center for Indian Community Development
Humboldt State University
Arcata, CA 95521
(707) 826-3711



\$25.00. 1996. 290 p.

Environmental Protection Native American Lands: A Cultural Approach to Integrated Environmental Studies is designed to cultivate a sense of place by studying the relationship between human activity and the land. Fifty-two lessons for grades 1-12 build upon Native American traditions and beliefs, specifically reflecting the cultures of the Hupa, Karuk, and Yurok people of northern California. Integrated waste management issues, including solid waste and pollution, and waste management practices, including recycling, composting, and vermiculture are explored throughout the curriculum.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science		—			
Health		—			
Mathematics		—			
Visual/Performing Arts		—			
Language Arts		—			
Industrial/Vocational Ed.		—			
Foreign Language		—			

COMMENTS

General Content

"The emphasis of this curriculum is on appreciation and awareness of the environment utilizing a cultural approach."

Presentation

"Easy to follow procedures which address the stated goals and objectives. Well developed sequence of lessons."

Pedagogy

"Relies heavily on introspection and personal commitment to environmental causes; may not be appropriate at the K-3 level."
"Strongly centered in the affective domain."

Teacher Usability

"The target population is children on tribal lands of northern California. For others, it is to serve as a 'guidepost' for developing material useful to native people."

Specific Content

At the primary level, lessons on composting and vermicomposting are offered.
"The global perspective of this curriculum is impressive!"

NatureScope: Pollution Problems and Solutions

McGraw-Hill, Inc.
Customer Services
P.O. Box 545
Blacklick, OH 43004-0545
(800) 722-4726



\$12.95. 1998. 110 p.

Created by the National Wildlife Federation for grades K-8, *NatureScope: Pollution Problems and Solutions* blends science, language arts, social science, and art to generate an understanding of the natural world and the environmental issues we face within it. Teacher background sections are followed by creative activities and ready-to-copy activity sheets for five topical areas: Pollution, Trash and Toxics, Up in the Air, Troubled Waters, and Choices and Challenges. Glossary, list of pollution laws, and an expanded, updated resource section are also included.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	A-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Updated in 1998, *NatureScope* is a supplemental resource covering a broad spectrum of pollution issues.

Presentation

Engaging graphics and "Copycat Pages."

Pedagogy

"Action components are sidebars rather than part of the lessons."

Teacher Usability

NatureScope offers extensive background information.

"Good supplemental activities for integration into an existing curriculum."

"The recently expanded resource section cites additional environmental education materials and wonderful suggestions for developing 'green schools.'"

"Activities are more appropriate for third grade and up."

Specific Content

"Deals with diverse and current topics, including a range of pollution issues."

Ecology in Action

The Ecology Center
2530 San Pablo Avenue
Berkeley, CA 94702
(510) 548-2220



\$11.00. 1990. 126 p.

Ecology in Action - Recycling Education Curriculum is a compilation of activities organized sequentially, using awareness, values, knowledge, problem solving, and action-taking as activity organizers. Thirty activities, some of which are drawn from other sources, are designed to help K-6 level students learn the value of and methods for reducing garbage by applying the three R's: reducing, reusing, and recycling. Worksheets, fact sheets, and bibliography are also featured.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A comprehensive collection of activities which are connected through introductory sections designed for the teacher."

"Most of the activities are derived from other sources which subsequently have been revised."

Presentation

Photocopied edition was reviewed for this project.

Pedagogy

"Age appropriate activities are presented within each lesson."

"Instructional objectives are not specified."

Teacher Usability

"Suggested grade levels are stated at the beginning of lessons to help teachers sort through the packet."

"Contains dated material requiring teachers to seek more recent information."

Specific Content

"Some of the material is specific to Berkeley."

The No-Waste Anthology

Environmental Education Coordinator
California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812
(916) 324-3614



No charge to California educators. 1991. 320 p.

The No-Waste Anthology, a Teacher's Guide to Environmental Activities K-12 is a compilation of material derived from other sources, reorganized into a single document. Seventy-six activities are organized into three sections: Natural Resources and Pollution, Solid Waste, and Hazardous Waste. Teacher background information, waste glossary, and an extensive cross-correlation of activities are also provided.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	A-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a wonderful anthology of some of the best waste management material available for the K-12 classroom."

Presentation

"It would be helpful if grade levels were listed in the Table of Contents."

Pedagogy

"There are some very good lessons here that actively engage the students and get them thinking. Many of the lessons could be easily adapted to other ages."

"If you are looking for a 'few good lessons' on a particular waste management topic, this works. If, however, you are looking for a curriculum with unifying themes and conceptual flow, you will have to develop your own matrix."

Teacher Usability

"It's easy to have activities cross-referenced in a variety of ways in the appendices."

"Very reader friendly."

Let's Reduce and Recycle: Curriculum for Solid Waste Awareness

United States Environmental Protection Agency
National Center for Environmental Publications and Information
P.O. Box 42419
Cincinnati, OH 45242
(800) 424-9346



No charge. 1990. 144 p.

Let's Reduce and Recycle offers a series of activities focusing on the impact of garbage on the environment and the application of waste prevention and recycling techniques. Divided into two sections, grades K-6 and 7-12, each contains five units that address the following concepts: What is Waste?, Where Does Waste Go?, How Does Waste Affect Our Resources?, How Can We Produce Less Waste?, and What Can We Do About Waste? Additional features include a glossary, a script to "Throwaway Three," list of state solid waste agencies, and educational resources.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B-
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Presentation

"Easy to read. Great worksheets."
"Interesting clip art to copy and use with particular lessons."
"Clear concise format."

Pedagogy

"The activities are nearly all 'paper-pencil' with little opportunity for active learning for the K-3 student."

Teacher Usability

"Lessons for K-6 are divided into five units with clearly stated objectives and corresponding icons."
"A teacher friendly manual."

Specific Content

Issues include source reduction, waste reduction, the three R's, litter prevention, natural resource conservation, consumerism and economics.

Garbage Reincarnation

Garbage Reincarnation, Inc.
Sonoma County Community Recycling
P.O. Box 1375
Santa Rosa, CA 95402
(707) 584-8666



\$8.95. No date. 51 p.

Garbage Reincarnation, Interdisciplinary Approach to Materials Conservation and Recycling is a packet of K-6 level lessons related to recycling and resource conservation. Twenty activities are sequentially arranged, beginning with a definition of waste, a discussion of methods used to handle waste, and concluding with strategies to establish community recycling programs.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B-
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science		—			
Health		—			
Mathematics		—			
Visual/Performing Arts		—			
Language Arts		—			
Industrial/Vocational Ed.		—			
Foreign Language		—			

COMMENTS

General Content

"This packet of waste management activities can be arranged to support four separate approaches: concept centered, student centered, values clarification, or random selection."

"Offers many activities that promote awareness of the need for conservation and solid waste management."

Presentation

"Not as graphically appealing as others."

Teacher Usability

"This curriculum appears dated."

"Grade levels are not listed."

Specific Content

"A comprehensive program with some unique ideas."

Waste in Place

Keep America Beautiful, Inc.
1010 Washington Blvd.
Stamford, CT 06901
(203) 323-8987



\$40.00. 1997. 132 p.

The sixth edition of *Waste in Place* explores the management of municipal solid waste and prevention of litter. Thirty-three interdisciplinary K-6 activities are organized into seven sections entitled Litter Prevention, How We Manage Garbage, Understanding Waste Management, Waste Reduction, Recycling/Composting, Waste-to-Energy/Landfill, and Enrichment. Parent information, consent letter, article reprints, and glossary of terms are also provided.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B+
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Waste in Place is a behaviorally oriented curriculum that seeks to change attitudes and practices related to waste management and litter prevention. “

Presentation

“I liked the baked pizza image for visual representation of a pie graph of solid waste by weight!”

Pedagogy

“Assessment is offered at the end of each lesson.”

“The majority of lessons require reading and math skills beyond the ability of the primary student.”

Teacher Usability

“Activities are more appropriate at the 4-6 level, rather than K-3 level.”

“Provides twenty pages of recent data in narrative and graph form as an overview of waste management.”

Specific Content

Waste in Place focuses on waste reduction and litter prevention.”

Trash Today, Treasure Tomorrow

Office of State Planning
Governor's Recycling Program
2 ½ Beacon Street
Concord, NH 03301
(603) 271-1098



\$12.50. 1990. 308 p.

Trash Today, Treasure Tomorrow is a compilation of K-6 activities designed to increase awareness of the strategies used to manage solid waste. Through hands-on science activities, literature, art, mathematics, and social science, students examine the role of source reduction, recycling and reuse, incineration, and landfilling. In addition, they examine their own role in the production and handling of waste. Some of the background information is based on New Hampshire data, but can be modified for application elsewhere.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS 0	1	2	3
Science	_____	_____	_____	_____
History/Social Science	_____	_____	_____	_____
Health	_____	_____	_____	_____
Mathematics	_____	_____	_____	_____
Visual/Performing Arts	_____	_____	_____	_____
Language Arts	_____	_____	_____	_____
Industrial/Vocational Ed.	_____	_____	_____	_____
Foreign Language	_____	_____	_____	_____

COMMENTS

General Content

"This curriculum was developed to address waste management issues in New Hampshire."

Presentation

"Each grade level is separated and labelled, and evaluation is offered at the end of each lesson."

Pedagogy

"The material is organized according to grade group level (kindergarten readiness, grades 1-2, and grades 3-4) making it easy for teachers to peruse. It has many useful activities that with excellent pedagogical strategies could become constructive lessons."

Teacher Usability

"Materials need to be reformatted and updated."

Specific Content

"A supplement useful for inclusion in an integrated waste management program."

Living Lightly in the City

Schlitz Audubon Center
1111 East Brown Deer Road
Milwaukee, WI 53217
(414) 352-2880



\$24.00. 1993 (reprinted). 178 p.

The *Living Lightly* series is comprised of four volumes of environmental education material for grades K-12. For the primary grades, *Living Lightly in the City, Volume I* offers activities that encourage students to explore various aspects of their immediate environment while avoiding the complexities of environmental issues. Lessons are organized within six units: Checking Out the Neighborhood, Sprouting and Growing (plant life), Jumping, Flying and Singing (animal life), Community Connections, Heating, Lighting and Moving, and Living Lightly.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	C+

DISCIPLINE	EMPHASIS 0	1	2	3
Science	_____	_____	_____	_____
History/Social Science	_____	_____	_____	_____
Health	_____	_____	_____	_____
Mathematics	_____	_____	_____	_____
Visual/Performing Arts	_____	_____	_____	_____
Language Arts	_____	_____	_____	_____
Industrial/Vocational Ed.	_____	_____	_____	_____
Foreign Language	_____	_____	_____	_____

COMMENTS

General Content

"This is a great resource packet of activities. Lessons within each unit are well connected so that the unit could stand alone."

The ultimate purpose of *Living in the City* at the primary level is to promote appreciation of the natural world.

Pedagogy

"Very appropriate for the kindergarten and first grade levels - highly sensory."

"The emphasis is upon enjoyment of the environment - giving the kids a sense of wonder."

"This curriculum has been intentionally designed to emphasize wonder and appreciation of the environment, leaving weightier global environmental issues for a later level when it is more developmentally and cognitively appropriate."

Teacher Usability

"I liked the topic index."

Specific Content

While *Living in the City* is a comprehensive environmental education curriculum, only a portion examines integrated waste management.

Activities Guide to Solid Waste and Recycling

Sacramento County Waste Management and Recycling Division
9850 Goethe Road
Sacramento, CA 95827
(916) 875-6789



No charge to educators in the unincorporated Sacramento area. 1995. 54 p.
Also available to other California educators upon special request.

Designed for grades 2- 6, the *Activities Guide to Solid Waste and Recycling* offers nine lessons to create awareness among students of how their daily action affects the environment. Students apply map reading skills to locate landfills, create a mini landfill in their classroom, use a calculator to determine how much garbage is produced in a day, and conduct a recycling drive. Although the curriculum uses regional (Sacramento) data in the background information, this information can be modified for application elsewhere. One activity is based on a field trip to the Keifer Landfill in Sacramento County.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B+
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Activities are designed to be integrated into existing curricula."

"Useful for pre-trip preparation before a field trip to a landfill."

Presentation

"Nice precise lesson format!"

Pedagogy

"While the lessons are designed for grades 2-6, some require math skills that are more appropriate for upper elementary."

Teacher Usability

"Lesson outcomes are clear, but developmentally inappropriate for the K-3 level."

"Glossary of terms is helpful."

Specific Content

"The primary focus of this curriculum is on landfills and solid waste with particular emphasis on the Sacramento area."

Counting on People

Zero Population Growth, Inc.
1400 16th Street, NW, Suite 320
Washington, DC 20036
(202) 332-2200



\$19.95. 1994. 147 p.

Counting on People: Elementary Population and Environmental Activities offers thirty-two lesson plans for grades 1-6. Global population dynamics and environmental issues, including limits to growth, natural resource use, and waste production are introduced through background information, songs, poetry, stories, and a variety of multidisciplinary activities. Natural resource consumption and waste production are addressed primarily in sections six and seven, representing approximately one-third of the book's activities.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B
Pedagogy	B-
Teacher Usability	B-
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Counting On* offers lessons on population dynamics which may be effective in setting the stage for other, more complete integrated waste management curricula."

Pedagogy

"The activities in each chapter are connected thematically."
"Math integration activities are useful for upper elementary."

Teacher Usability

"In the front it would be helpful to list activities with grade levels."

Specific Content

"Its integrated waste management lessons are few, making its use for studies in integrated waste management limited."

Closing the Loop: Exploring Integrated Waste Management and Resource Conservation

California Integrated Waste Management Board
Public Education and Assistance Section
8800 Cal Center Drive, Mail Station #5
Sacramento, CA 95826
(916) 255-2385



No charge to California educators who participate in a workshop. 2000. 650 p.

Completely revised and updated in 2000, *Closing the Loop: Exploring Integrated Waste Management and Resource Conservation* applies K-6 level project-based learning to examine issues related to integrated waste management and resource conservation. In the 4-6 module, twenty-seven lessons are organized within four units entitled Managing and Conserving Natural Resources; Reducing, Reusing, and Recycling; Composting; and Managing Household Hazardous Waste Properly. Extensive appendices include vocabulary lists, an overview of integrated waste management, an overview of the handling specific materials, information to establish composting systems, websites, and jurisdiction information.

REPORT CARD

Overall Grade	A
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	A
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"All information (concepts, objectives, etc.) are readily available."

"This is a comprehensive waste management resource that is child-centered, teacher friendly, and research based."

Presentation

Draft edition without camera-ready format was reviewed for this project.

Pedagogy

"Good literature emphasis."

"Lessons note connection to specific content standards and frameworks."

Teacher Usability

"Readable and understandable for a new teacher. Extensive but concise background information - very useable!"

"Teacher friendly with a more useable format than the former edition."

"Lots of material, including literature, is needed to implement the curriculum."

"Lessons are very detailed and lengthy - seems overwhelming."

A Child's Place in the Environment

California Department of Education
Publications Division, Sales Office
P.O. Box 271
Sacramento, CA 95812
(800) 995-4099

Olga Clymire
Lake County Office of Education
1152 South Main Street
Lakeport, CA 95453
(707) 263-7249

\$65.00. 1996. 538 p.



Achieving a Sustainable Community is the sixth grade unit within *A Child's Place in the Environment* series. Designed as an interdisciplinary and thematic environmental education curriculum, *Achieving a Sustainable Community* encourages students to become aware of the characteristics common to natural and human communities, appreciate the significance of achieving sustainability, and act accordingly within their community. Twenty in-depth sequential lessons integrate science, history-social science, and English-language arts; of these, several deal with waste reduction.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	A-
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This binder is part of a larger curriculum."
"Literature selections are an integral part of the program."

"This is a superb effort by many teachers and 'environmentalists' to involve the student in acquiring the knowledge to become an informed citizen. The literature tie in is excellent."

Pedagogy

"Active learning is promoted through the lessons." "

Teacher Usability

"Very useable and teacher friendly (preparation time and materials required, checklists, etc.)."

"Many materials are needed to be gathered or purchased by the teacher. If literature selections are not available, you'd lose an integral part of the curriculum."

"Can be used as a unit or sections can be pulled out."

Specific Content

"High quality, but few lessons focus on integrated waste management issues."

Windows on Waste

Ohio Department of Natural Resources
Public Information Center
1952 Belcher Drive
Columbus, OH 43224
(614) 265-6333



Free to Ohio educators participating in workshop.
\$30.00 for all others. 1999. 345 p.

Designed for the 4-6 grade level, *Windows on Waste: a Solid Waste Curriculum Supplement* presents interdisciplinary activities arranged according to fourteen environmental studies concepts. These concepts include land use and community resources, market system economics, solid waste analysis, government and citizenship, and the business of recycling. Each section of the curriculum is accompanied by an explanation of relevant environmental concerns, essential vocabulary, teacher background information, and activity summaries.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	A-
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a classroom based program that examines waste issues."
"Wonderful!"

Presentation

Draft edition was reviewed for this project.
"The sidebar is an easy planning guide with step by step directions."

Pedagogy

"Assessment is specifically included for each lesson."
"Assessment is specific to Ohio's proficiency tests."

Teacher Usability

"Lots of great activities are offered. Student handout pages are very well done (and motivational)."
"Teacher friendly! Brand new teachers could readily use this without feeling overwhelmed." Everything is right at their fingertips."

Specific Content

"An excellent overview of waste."

A Child's Place in the Environment

California Department of Education
Publications Division, Sales Office
P.O. Box 271
Sacramento, CA 95812
(800) 995-4099

Olga Clymire
Lake County Office of Education
1152 South Main Street
Lakeport, CA 95453
(707) 263-7249

\$55.00. 1997. 370 p.



Conserving Natural Resources is the fifth grade unit within *A Child's Place in the Environment* series. Designed as an interdisciplinary and thematic environmental education curriculum, *Conserving Natural Resources* encourages students to become aware of the importance of natural resources, understand the human use of such resources, and act responsibly by practicing waste prevention and conservation. Twenty in-depth sequential lessons integrate science, history-social science, and English-language arts.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Can be used as a complete curriculum or supplemental unit to reinforce subject areas."

Presentation

"Student handouts are well organized and thought provoking."

Pedagogy

"Activities promote student learning with emphasis on language arts and science."

"Offers 'extensions' to extend learning (homework activities, class projects)."

"This curriculum integrates state frameworks from many disciplines."

Teacher Usability

"Very teacher friendly."

"Lots of materials needed to implement the curriculum."

Specific Content

"Focuses on natural resources and our impact upon them. It is not intended as an integrated waste management curriculum, but students who go through it would have a greater awareness of their role in both the [waste] problem and solution."

Pathways to a Sustainable Future

The Chewonki Foundation
485 Chewonki Neck Road
Wiscasset, ME 04578
(207) 882-7323



\$19.95. 1999. 198 p.

Recently revised, *Pathways to a Sustainable Future, A Curriculum Guide for Schools Exploring Waste Management Issues* presents several routes of exploration, from awareness pathways ("What is the waste problem?") to assessment pathways ("How are we doing?") to action pathways ("How can we have an impact on the waste problem?"). Designed for K-12 classrooms, the material offers background information, activities, and support material on composting, hazardous waste, recycling and reuse, source reduction, landfilling, and incineration.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	B+
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A well developed curriculum with long-term activities for students."

Presentation

Draft edition was reviewed for compendium. Final edition is well designed.

Pedagogy

"The curriculum guides students while allowing them to explore concepts and build new knowledge."

Teacher Usability

"Materials are very teacher friendly. All information is accessible and easy to understand. Level index is helpful for grade level planning."

"Needs to provide a time framework and list of disciplines emphasized."

Specific Content

"Developed in Maine, but the issues are pertinent to all students."

Environmental Protection Native American Lands

Center for Indian Community Development
Humboldt State University
Arcata, CA 95521
(707) 826-3711



\$25.00. 1996. 290 p.

Environmental Protection Native American Lands: A Cultural Approach to Integrated Environmental Studies is designed to cultivate a sense of place by studying the relationship between human activity and the land. Fifty-two lessons for grades 1-12 build upon Native American traditions and beliefs, specifically reflecting the cultures of the Hupa, Karuk, and Yurok people of northern California. Integrated waste management issues, including solid waste and pollution, and waste management practices, including recycling, composting, and vermiculture are explored throughout the curriculum.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science		—			
Health		—			
Mathematics		—			
Visual/Performing Arts		—			
Language Arts		—			
Industrial/Vocational Ed.		—			
Foreign (Native) Language		—			

COMMENTS

General Content

"An outstanding source of non-western cultural views of respect, responsibility, and stewardship of the environment."

"This is a very relevant curriculum guide for Native Americans."

Presentation

"Excellent art work, photographs, and cultural connections."

"Wonderful imagery."

Pedagogy

"This is not meant for regular classroom use. It requires a change of view in order to see the world not as a 'resource.' It sponsors a lifetime commitment towards living lightly and in harmony, while putting technology into perspective."

"Science and math connections are strong."

Teacher Usability

"Lessons are written for a broad range of ages (K-12)."

Specific Content

Integrated waste management issues are dealt with culturally and spiritually.

Understanding Garbage and Our Environment

McGraw-Hill, Inc.
Customer Services
P.O. Box 545
Blacklick, OH 43004-0545
(800) 722-4726



\$19.95. 1999. 306 p.

Understanding Garbage and Our Environment presents eight comprehensive lessons to help middle-school students explore solid waste management issues. These issues include the characteristics of solid waste, health concerns, source reduction, resource recovery, and waste disposal methods. Within each lesson are a number of activities, plus teacher background information, notes, student background information and instructions, and "The Garbage Gazette" student readings.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	B+
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Good breadth. Addresses health issues which are often overlooked."

Presentation

"The layout and teacher notes make this 'an easy to access' choice."

Pedagogy

"May be beyond the reach of many fourth and fifth graders. It is designed for middle school."

"Cross-curricular integration is strong."

Teacher Usability

"The 'Garbage Gazettes' used for additional student information are a student friendly resource."

"Some lessons require costly materials."

Specific Content

All major integrated waste management issues are explored in *Understanding Garbage*.

Trash Conflicts

Educators for Social Responsibility
23 Garden Street
Cambridge, MA 02138
(617) 492-1764



\$28.00. 1993. 246 p.

Trash Conflicts, A Science and Social Studies Curriculum on the Ethics of Disposal integrates middle school level science and social science to examine the impact of waste production and ethics of disposal. Twenty-seven activities explore trash and hazardous waste from the perspective of environmental safety and social justice, concluding with student readings and action projects. Resource directory and bibliography are also included.

REPORT CARD

Overall Grade	A-
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Trash Conflicts* presents several case studies. Disposal issues are explored on a personal level."

"Good resource for debate material."

Presentation

Graphics need improvement.

Pedagogy

"Critical thinking skills are emphasized."

"Activities may not be appropriate at the fourth and fifth grade levels."

"Lots of means for role playing."

"Effectively tackles some challenging issues (siting of landfills, environmental justice, etc.) and is sensitive to cultural and economic diversities."

Teacher Usability

Lessons are written for the sixth through eighth grade level.

An Ounce of Prevention

The Dow Chemical Company
An Ounce of Prevention
P.O. Box 1206
Midland, MI 48641-9823
(517) 636-7155



Free to educators of grades 6-9. 1997. 88 p.

Produced by the National Science Teachers Association and Dow Chemical Company, *An Ounce of Prevention* is a middle level science curriculum that focuses on source reduction and the need to conserve resources. Sequentially arranged lessons are organized in six sections, providing background information on garbage, the handling of garbage, the issue of packaging, hazardous waste, life cycle analyses (environmental effects of products and processes from a cradle-to-grave perspective), and the application of critical thinking skills to resolve an environmental dilemma.

REPORT CARD

Overall Grade	A-
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	A
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Well designed supplemental activities including one very effective life cycle analysis lesson using the 'Life of a Hamburger' poster (included)."

Pedagogy

"Applications to real life situations could be developed further."

"Supports teacher-directed learning."

"Incorporates systems thinking into the lessons."

"The activities are presented in a step by step fashion ending with a decision-making project."

Teacher Usability

"Handouts used in each activitiy need to be better referenced."

"Teacher notes provide useful information."

Specific Content

"Covers important ideas in depth; focuses on source reduction."

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 569 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (K-8 edition) addresses numerous environmental issues, including the impact of litter and garbage, and the effects of recycling, composting, and conserving natural resources on both a regional and global level. Interdisciplinary lessons are divided by grade levels (K-1, 2-3, 4-5, and 6-8) and are supported by an extensive resource section covering background information, glossary, and list of books and videos.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned.

Pedagogy

"Activities are age appropriate and use local community support."

"Includes some innovative activities."

Teacher Usability

"Includes in-class and take-home activities."

"The curriculum is divided by grade group; some of the lessons in the six-eight section may be too difficult for sixth grade."

"Good resource for new teachers since everything is at their fingertips."

"Excellent resource section for teacher background."

Specific Content

Developed for use in South Carolina.

"Very well put together - relates the lesson to the 'real world' through some fact provided in the 'Down to Earth' section."

A-Way with Waste

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue, SE
Bellevue, WA 98008



No charge. 1990. 574 p.

Quantities are limited. Permission is granted to educators to reproduce lesson plans from CIWMB masters for classroom use, provided credit is given to WSDE.

The third edition of *A-Way with Waste* offers a comprehensive collection of activities written for grades K-12. Eighty-six activities from the second edition are combined with over thirty new activities and presented in three sections: Solid Waste Management (including three subsections: Reduce, Recycle, Dispose); Hazardous Waste; and Waste and Water. Fact sheets and teacher background material introduce each section; a bibliography and glossary are provided at the conclusion.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

A-Way with Waste is a huge curriculum that can stand alone or be used to enhance other disciplines."

Presentation

"The size and binding makes it cumbersome to access."

Pedagogy

"Activities are action-oriented."
"Includes extension activities."

Teacher Usability

"K-12 lessons are included in one big binder that the teacher has to sort through."
"Resources and bibliography are listed on each lesson."

Specific Content

"Background information is specific to the state of Washington."

What a Waste!

Southwest Connecticut Regional
Recycling Operating Committee
1410 Honeyspot Road Extension
Stratford, CT 06497
(203) 381-9571

\$10.95. 1992. 101 p.

What a Waste! A Teacher's Resource for Integrating the Solid Waste Crisis in the Classroom is an elementary level (grades 3-6) curriculum consisting of lessons and activities in one section, and specific strategies to reduce waste in the second section. The fifteen lessons focus on what constitutes waste, roots of the waste problem, the affect of waste on natural resources, and the handling of solid waste. Specific strategies focus on consumer awareness, composting, reducing, reusing, and recycling. Glossary, resources, and suggestions for school recycling programs are also offered.



REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"The lessons in *What a Waste* can be taught as a comprehensive unit or as individual presentations."
"Good resource for classroom activities."
"Well rounded."

Presentation

"Clear graphics and valuable classroom handouts."
"Nice layout and unit organization."

Pedagogy

"Lessons are well developed and apply student learning to the home front."

Teacher Usability

"Some material will need to be purchased - could be costly."

Specific Content

Covers source and waste reduction.
"Environmental responsibility is underlined throughout."

Re-Source Your Trash

State of Missouri
Department of Natural Resources
Division of Environmental Quality
P.O. Box 176
Jefferson City, MO 65102-0176
(800) 361-4827



No charge. 1999. Page count not yet finalized.

Re-Source Your Trash: Missouri's Solid Waste Curriculum examines a variety of solid waste management options and ultimately empowers students in grades 4-8 to develop a personal solid waste plan. Although based upon Missouri facts and practices, the twenty-three lessons are easily adapted to any classroom where they can be integrated within the context of social or environmental issues. Glossary, resources, and appendices are also included.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	B
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Overall a strong curriculum with great appendices including standards, and environmental education guidelines."

Presentation

Draft edition was reviewed for this project.
"I liked the font and layout!"

Pedagogy

"Includes a great lesson on life cycle analysis of consumer products."

Teacher Usability

References and listings of additional materials are provided.
"Need to have grade levels noted."

Specific Content

"Some background information and activities are specific to Missouri."

Waste in Place

Keep America Beautiful, Inc.
1010 Washington Blvd.
Stamford, CT 06901
(203) 323-8987.



\$40.00. 1997. 132 p.

The sixth edition of *Waste in Place* explores the management of municipal solid waste and prevention of litter. Thirty-three interdisciplinary activities for grades K-6 are organized into seven sections entitled Litter Prevention, How We Manage Garbage, Understanding Waste Management, Waste Reduction, Recycling/Composting, Waste-to-Energy/Landfill, and Enrichment. Parent information, consent letter, article reprints, and glossary of terms are also provided.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A good overview. Lots of information is provided."

Presentation

"The layout is clear, the graphics good."

Pedagogy

"At the 4 - 6 level, many activities lack depth and challenge."

"Enrichment activities are provided at the end of each lesson."

Teacher Usability

"*Waste in Place* is easy to use. Nice tabulation that makes exploring easier."

"Subject chart is useful. Good enrichment activities."

"Attendance at the workshop would make this [even] easier to use."

Specific Content

"A strong focus on litter prevention."

The No-Waste Anthology

Environmental Education Coordinator
California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812
(916) 324-3614



No charge to California educators. 1991. 320 p.

The No-Waste Anthology, a Teacher's Guide to Environmental Activities K-12 is a compilation of material derived from other sources, reorganized into a single document. Seventy-six activities are organized into three sections: Natural Resources and Pollution, Solid Waste, and Hazardous Waste. Teacher background information, waste glossary, and an extensive cross-correlation of activities are also provided.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Provides a good overall view and lots of activities."

"This is a collection of some of the better activities [from an array of resources] compiled into one book."

Presentation

"The size and binding makes it cumbersome to access."

Pedagogy

"Heavy on discussions not experiences."

"While many of the activities are targeted for higher grade levels, they could be adjusted for 4-6."

Teacher Usability

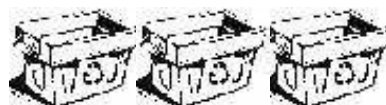
"Lessons are well indexed by subject, topic area, and grade level."

"The grade and subject indices would be more useful with page references."

"Very teacher friendly!"

Counting On People

Zero Population Growth, Inc.
1400 16th Street, NW, Suite 320
Washington, DC 20036
(202) 332-2200



\$19.95. 1994. 147 p.

Counting on People: Elementary Population and Environmental Activities offers thirty-two lesson plans for grades 1-6. Global population dynamics and environmental issues, including limits to growth, natural resource use, and waste production are introduced through background information, songs, poetry, stories, and a variety of multidisciplinary activities. Natural resource consumption and waste production are addressed primarily in sections six and seven, representing approximately one-third of the book's activities.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Physical Education					

COMMENTS

General Content

Counting On People offers well designed activities that focus on zero population growth; it does not, however, have a clearly defined scope and sequence specific to integrated waste management issues."

Presentation

"Lessons are well laid out and easy to follow. The book has a brief, but detailed lesson summary at the front."

Pedagogy

"Some very good activities use math and language arts skills."
Action component in the lessons needs to be further developed.

Teacher Usability

"Very easy to implement!"

Specific Content

Five of thirty-two lessons focus on integrated waste management issues.

NatureScope: Pollution Problems and Solutions

McGraw-Hill, Inc.
Customer Services
P.O. Box 545
Blacklick, OH 43004-0545
(800) 722-4726



\$12.95. 1998. 110 p.

Created by the National Wildlife Federation for grades K-8, *NatureScope: Pollution Problems and Solutions* blends science, language arts, social science, and art to generate an understanding of the natural world and the environmental issues we face within it. Teacher background sections are followed by creative activities and ready-to-copy activity sheets for five topical areas: Pollution, Trash and Toxics, Up in the Air, Troubled Waters, and Choices and Challenges. Glossary, list of pollution laws, and an expanded, updated resource section are also included.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B-
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a teacher resource that offers good handouts and activities. The performing art pieces are especially valuable for classroom productions, as are the case studies of people who have made a difference."

Presentation

"The materials designed to be copied are very sharp."

"Engaging layout."

Pedagogy

"Varied perspectives on the issues are noted."

Teacher Usability

"This is teacher friendly - very easy to read and apply."

The amount of time required for an activity is not noted.

Specific Content

"This is primarily a pollution-oriented curriculum with a broader focus (solid and hazardous waste, air and water pollution) than that of integrated waste management alone."

BFI Mobius Curriculum: Understanding the Waste Cycle

Browning-Ferris Industries, Inc.
The Mobius Program
P.O. Box 3151
Houston, TX 77253-9984
(281) 870-8100



No charge. 1995. 135 p.
Quantities are limited. Permission is granted to educators to reproduce lesson plans from CIWMB masters for classroom use, provided credit is given to BFI.

The third edition of the *BFI Mobius Curriculum* introduces students in grades 4-6 to solid waste management systems and disposal solutions, including the application of reducing, reusing, and recycling on a personal and community level. Lessons explore recycling, composting, waste-to-energy (incineration), and landfilling, while examining past and current issues. Glossary, bibliography, worksheet packet, and additional resources are also provided.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B+
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Mobius* provides a set of activities based on different solid waste topics."

Presentation

"Usable format - graphics make it easy and enjoyable to use. The activity worksheets are motivational for the students and nicely presented."

Pedagogy

Focus needs more breadth and depth.
"There are many worthwhile, age appropriate activities and demonstrations. Students have many opportunities to develop their own environmental awareness through observation, measurements, analysis, and interpretation without being overwhelmed by excessive information."

Teacher Usability

"Very teacher friendly."

Specific Content

Focuses on understanding the waste cycle.

Think Earth

Educational Development Specialists
5505 East Carson Street, Suite 250
Lakewood, CA 90713
(562) 420-6814



\$50.00 per grade-level unit. 1998. Packaged kit.

Think Earth is a complete instructional K-6 package that features a teacher guide, story cards, posters, practice cards, reproducible masters, and a seven-minute video. Each grade-level set of activities focuses on the conservation of natural resources and reduction of waste and pollution. The grade four unit specifically addresses waste reduction, the grade five unit addresses pollution control, and the grade six unit addresses natural resources.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Each *Think Earth* unit is a grade-specific, topic specific stand-alone curriculum that is attractive and motivational for students."
"To experience a comprehensive curriculum, students would need to have used *Think Earth* materials at each grade level K-6."

Presentation

"Very well designed, grade appropriate materials."
Colorful posters are included.
"Good use of multicultural imagery."

Pedagogy

"Students involve their families in their learning opportunities."
"Not really a curriculum - lots of sponge activities that are based on paper and pencil."

Teacher Usability

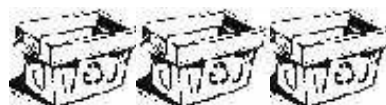
"Good for use with Earth Week activities."
"Nice literature appendix."

Specific Content

"Only the fourth grade unit focuses specifically on waste reduction."

Garbage Reincarnation

Garbage Reincarnation, Inc.
Sonoma County Community Recycling
P.O. Box 1375
Santa Rosa, CA 95402
(707) 584-8666



\$8.95. No date. 51 p.

Garbage Reincarnation, Interdisciplinary Approach to Materials Conservation and Recycling is a packet of K-6 level lessons related to recycling and resource conservation. Twenty activities are sequentially arranged, beginning with a definition of waste, a discussion of methods used to handle waste, and concluding with strategies to establish community recycling programs.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Offers a wide variety of activities."
"This is a packet of activities related to recycling and resource conservation."

Presentation

"The information is difficult to access and the graphics sometimes interfere with understanding."

Pedagogy

"There is a strong personal - school - home- and community connection."
"Environmental behaviors are modelled well."

Teacher Usability

"Key words, time frame, and disciplines are listed which would help with lesson planning."
"Too wordy."
Statistics need to be updated.

Activities Guide to Solid Waste and Recycling

Sacramento County Waste Management and Recycling Division
9850 Goethe Road
Sacramento, CA 95827
(916) 875-6789



No charge to educators in the unincorporated Sacramento area. 1995. 54 p.
Also available to other California educators upon special request.

Designed for grades 2-6, the *Activities Guide to Solid Waste and Recycling* offers nine lessons to create awareness among students of how their daily action affects the environment. Students apply map reading skills to locate landfills, create a mini landfill in their classroom, use a calculator to determine how much garbage is produced in a day, and conduct a recycling drive. Although the curriculum uses regional (Sacramento) data in the background information, this information can be modified for application elsewhere. One activity is based on a field trip to the Keifer Landfill in Sacramento County.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B
Teacher Usability	B+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a collection of activities that can be used to supplement other curricula by presenting a solid waste and recycling perspective."

Presentation

"Clear layout - easy to follow."

Pedagogy

"Activities can be independently used since they do not build upon one another."
"Needs more depth."

Teacher Usability

"Offers good suggestions for supplementary activities including field trips and projects."
"Provides clear directions."

Specific Content

"Many of the student community involvement opportunities are based in Sacramento County."

Living Lightly in the City

Schlitz Audubon Center
1111 East Brown Deer Road
Milwaukee, WI 53217
(414) 352-2880



\$24.00. 1992 (second edition). 200 p.

The *Living Lightly* series is comprised of four volumes of environmental education material for grades K -12. For the upper elementary grades, *Living Lightly in the City, Volume II* offers activities that help students understand their relationship with the natural world and apply this knowledge when making consumer choices and life-style decisions. Lessons are organized within eight units: Checking Out the Neighborhood, Natural Neighbors, Back to Basics, Native American Perspectives, Less Is More, Going Places, Where Does Water Go? and Enough for Everyone?

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B+
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Living Lightly is a broad environmental education curriculum.
"Activities appear easy to implement and the student sheets are well done."

Presentation

"Easy format to use."

Pedagogy

"Most of the activities rely on observations and use of pencil and paper."

Teacher Usability

"A general overview is given at the beginning of each unit. The index by topic is very useful. The loose-leaf arrangement makes it easy to copy pages for the classroom."

Specific Content

"Only a few lessons relate to the focus of this compendium."

Rethinking Recycling

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97217
(503) 229-5913



\$33.00 for entire curriculum and \$6.00 for video (no charge to Oregon educators).
1993. Packaged folder of materials.

Rethinking Recycling, an Oregon Waste Reduction Curriculum is a comprehensive package consisting of four grade-group levels of Classroom Activity Packets (K-2, 3-5, 6-8, and 9-12), a Teacher Resource Guide (63 p.), recycling and waste reduction booklet (18 p.), and video, "The Recycle Lifecycle of Glass." The Teacher Resource Guide provides background information, fact sheets, reprints of articles, suggested instructional methods, and lists of additional resources. At the 3-5 level, the Classroom Activity Packet consists of twelve lessons and related handouts designed to make students understand waste management options and take action to reduce waste.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B
Pedagogy	B-
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Rethinking Recycling offers twelve activities that make students aware of solid waste management issues."

Presentation

"Packaging is not well organized (loose, unnumbered pages)."

Pedagogy

"Extension activities (long-term and short-term projects) are suggested for each lesson."

"Limited opportunity to promote active learning and higher level thinking."

Teacher Usability

"Very teacher friendly."

"Includes guidelines for implementing a waste reduction program - very precise and easy to follow."

"Extensive list of resources."

Specific Content

Specifically designed for the state of Oregon although useful with some modification elsewhere.

Let's Reduce and Recycle: A Curriculum for Solid Waste Awareness

United States Environmental Protection Agency
National Center for Environmental Publications and Information
P.O. Box 42419
Cincinnati, OH 45242
(800) 424-9346



No charge. 1990. 144 p.

Let's Reduce and Recycle offers a series of activities focusing on the impact of garbage on the environment and the application of waste prevention and recycling techniques. Divided into two sections, grades K-6 and 7-12, each contains five units that address the following concepts: What is Waste?, Where Does Waste Go?, How Does Waste Affect Our Resources?, How Can We Produce Less Waste?, and What Can We Do About Waste? Additional features include a glossary, a script to "Throwaway Three," list of state solid waste agencies, and educational resources.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B
Pedagogy	B-
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Let's Reduce and Recycle* is a collection of activities designed to give students an awareness of waste management issues."
"Presents a strong community focus as the context."

Presentation

"Good handouts."
"Great clip art section."

Pedagogy

"Lacks a clearly defined scope and sequence."
"Many activities are too young for the 4-6 level, although some may be adaptable for 4th grade."

Teacher Usability

"Offers an extensive list of resources."
"Vocabulary and objectives are highlighted."

Air to Earth Teacher's Resource Kit

Nike, Inc.
Reuse-A-Shoe/Air to Earth
c/o Eco Educators
1335 Dublin Road, #216 C
Columbus, OH 43214
(614) 487-9522



No charge to educators who participate in a workshop. 1998. 82 p. plus kit.

Consisting of teacher's guide, video, poster, examples of materials found in athletic shoes, an athletic shoe sliced for recycling, and Nike Grind (ground up athletic shoes), the *Air to Earth Teacher's Resource Kit* allows students in grades 4-7 to examine the life-cycle of athletic shoes to begin understanding the concepts of conservation and sustainability. Ten lesson plans explore the design, development, retailing, and downcycling (final disposition) of a single consumer product, culminating with an environmental action project such as participating in the Reuse-A-Shoe collections program.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is not meant to be a stand alone curriculum. It takes a single product [through its entire life cycle] from the use of natural resources, manufacturing of the product, its use, and its disposal or recycling." "A good supplement to other curricula and motivational to students."

Presentation

"Nice booklet; graphics are well done."

Pedagogy

"Has a promotional [corporate advertising] slant."

"This would be of interest to students - applicable to real-life decision-making."

"A great module for 'closing the loop'."

"Correlated to Project 2061: Benchmarks for Science Literacy."

Teacher Usability

"Teachers and students will enjoy the 'shoe box' of goodies."

Caution should be raised, however, regarding the blatant promotion of Nike products.

"Resource guide lists websites."

Revise, Recycle, Recover

Frost Valley YMCA
HC 55, Frost Valley Road
Claryville, NY 12725
(914) 985-2291



\$9.95. 1991. 70 p.

Revise, Recycle, Recover, Realizing Our Resources presents a series of lesson plans designed for the upper elementary through secondary level. Three general concepts of solid waste management are reinforced: (1) the revision of thought and consumer behavior, (2) the recycling of material to conserve energy, natural resources, and space, and (3) the recovery of resources as an alternative to sanitary landfills. Thirty-nine lesson plans are followed by reference sheets, glossary, and listing of resources and agencies.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science		—			
Health		—			
Mathematics		—			
Visual/Performing Arts		—			
Language Arts		—			
Industrial/Vocational Ed.		—			
Foreign Language		—			

COMMENTS

General Content

"This is a community oriented program with a commitment to action projects."

Presentation

"Illustrations depict a child in a wheelchair as an active participant."

Pedagogy

"Lessons seem more appropriate for outdoor education rather than indoor academics."
"Many of the activities are designed for older students."

Teacher Usability

"Easy to use - has a list of materials needed at the beginning of each lesson."

Planet Patrol

Procter & Gamble
Educational Services
P.O. Box 599
Cincinnati, OH 45201



No charge. 1997. 15 p. plus handouts

Planet Patrol, An Environmental Unit of Solid Waste Solutions presents background information and four lessons focused primarily on the integrated management of solid waste through sanitary landfilling, source reduction, recycling and composting, and waste combustion (waste-to-energy incineration). The multidisciplinary lessons are designed for use in grades 4-6 and are designed to promote environmentally responsible behaviors. Parent take-home sheets and masters for overhead visuals are also provided.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Planet Patrol is an activity packet consisting of four lessons.

"Offers good supplemental lessons."

"A good introduction to solid waste - could be used as a supplement to a curriculum."

Presentation

"The wall chart (poster) shows items being taken for recycling or made from recycled material."

"Industry perspective [self-promotion of P&G products] is presented."

Pedagogy

"Student materials need improvement."

"The suggested extensions potentially add a lot to the activities."

Teacher Usability

"Easy for teachers to use."

"Teacher booklet is clear and concise."

Specific Content

"Focuses on recycling, composting, incineration, and landfilling."

Reduce, Reuse, Recycle, A Waste Reduction Activity Kit

Eco-Cycle
P.O. Box 19006
5030 Pearl
Boulder, CO 80308
(303) 444-6634



\$250.00 plus \$15.00 shipping. 1998. 67 p. plus kit.

Packed in an eighteen gallon container, *Reduce, Reuse, Recycle, A Waste Reduction Activity Kit* features two scripted slide shows, curriculum guide, visual aids, and several "grab bags" and boxes of material illustrating various stages of precycling, recycling, and reuse. Designed for grades 4-8, the kit presents five days' worth of hands-on activities that enable students to examine recycled products, understand reprocessing steps at factories, learn of the history of trash, experiment with a modern landfill, and research the environmental benefits of recycling.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a fun and interesting teacher resource kit that supplies everything you need for a five-hour one week recycling/reuse unit."

"Offers five lessons on different waste management issues."

Pedagogy

"The samples of recycled materials help to support many of the integrated waste management concepts."

Teacher Usability

The kit comes with all necessary materials. "The \$250.00 cost might stop some people, but the hours saved on preparation would compensate for it."

"Minimal prep time is needed."

"Requires a slide projector."

Specific Content

The kit's focus is on waste reduction, consumerism, and the three R's.

San Diego, A World in Harmony

I Love A Clean San Diego
4355 Ruffin Road, Suite 118
San Diego, CA 92123
(858) 467-0103



No charge beyond \$5.00 postage. 1994. 494 p.

San Diego, A World in Harmony, An Environmental Awareness Curriculum for Grades 7-12 addresses such ecological issues as water conservation, recycling, urban runoff, and composting. Using San Diego as the setting, the material is designed to challenge students to examine the relationship between their local environment and their behavior, and take individual action to effect positive change. Current waste disposal issues, waste reduction strategies, litter, precycling, and recycling are explored through a number of multidisciplinary activities.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A
Teacher Usability	A-
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*San Diego, A World in Harmony* meets most of the implied goals of the IWM compendium tool better than any other single resource."

"An excellent curriculum - unique integration of water issues (a strong point of the curriculum)."

Pedagogy

"Special education considerations are excellent."

"A good balance of disciplines (math, science, etc.)."

"Culturally sensitive and with very thorough framework connections."

Teacher Usability

"Clear objectives are provided."

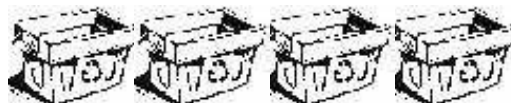
"Very easy to use."

Specific Content

"Best of the bunch if you live in San Diego." Some lessons would have to be modified for application elsewhere.

Exploring Environmental Issues: Municipal Solid Waste

Project Learning Tree
American Forest Foundation
1111 19th Street, NW, Suite 780
Washington, DC 20036
(202) 463-2462



No charge to educators who participate in a workshop. 1997. 136 p.

As one module in Project Learning Tree's secondary environmental education program, *Exploring Environmental Issues: Municipal Solid Waste* is designed to help students in grades 9-12 explore the management of solid waste and implications of the current waste dilemma. Eight interdisciplinary activities focus on the development of critical thinking skills which ultimately help students realize the connections among the products they purchase, the natural resources they consume, and the waste they generate. The module also features extensive background sections and numerous appendices. With some modification the material could be used with seventh and eighth grade students.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	B+
Pedagogy	A
Teacher Usability	A
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Presentation

"Excellent organization, although the layout is condensed."

Pedagogy

"Good, minds-on activities that involve deeper student inquiry."

"Conceptual framework and themes are identified."

"Applicable at the ninth grade - not seventh or eighth."

Teacher Usability

"Excellent teacher background."

"Very teacher friendly, although the materials needed for some of the activities may be hard to collect."

Specific Content

"If only one curriculum is used, this should be it!"

One of only a few that addresses environmental justice.

"Provides a history of garbage. Activities thoroughly explore a topic."

Environmental Protection Native American Lands

Center for Indian Community Development
Humboldt State University
Arcata, CA 95521
(707) 826-3711



\$25.00. 1996. 290 p.

Environmental Protection Native American Lands: A Cultural Approach to Integrated Environmental Studies is designed to cultivate a sense of place by studying the relationship between human activity and the land. Fifty-two lessons for grades 1-12 build upon Native American traditions and beliefs, specifically reflecting the cultures of the Hupa, Karuk, and Yurok people of northern California. Integrated waste management issues, including solid waste and pollution, and waste management practices, including recycling, composting, and vermiculture are explored throughout the curriculum.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	A-
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Presents a strong message about "living lightly" and respecting the interconnectedness of all systems. "A good, year-long integrated science-society waste curriculum."

Presentation

"Well organized and illustrated."

Pedagogy

"A less heavy-handed, and ultimately, more powerful approach."
"Strong evidence of interdisciplinary approach."
"The reading [level] may be too difficult for middle school students."

Teacher Usability

"Uses readily available lab materials."
"Needs a table of contents by grade level."

Specific Content

"Culturally specific."
"Explores important topics all others miss (i.e. ethics, sensitive caring for the land)."
"Cultural limitations are inherent in the design and acknowledged by the authors."

Trash Conflicts

Educators for Social Responsibility
23 Garden Street
Cambridge, MA 02138
(617) 492-1764



\$28.00. 1993. 246 p.

Trash Conflicts, A Science and Social Studies Curriculum on the Ethics of Disposal integrates middle school level science and social science to examine the impact of waste production and ethics of disposal. Twenty-seven activities explore trash and hazardous waste from the perspective of environmental safety and social justice, concluding with student readings and action projects. Resource directory and bibliography are also included.

REPORT CARD

Overall Grade	A-
General Content	A
Presentation	B+
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*Trash Conflicts* approaches waste management from a socioeconomic point of view."
"This combines the best original and borrowed material - comprehensive yet not duplicative. I liked this very much. It is balanced in all respects."

Presentation

"Reproduction quality is doubtful on the student handouts."

Pedagogy

"Some very good lessons are offered. Seems to have all the pieces."
"Offers a variety of instructional strategies."

Teacher Usability

"Lots of teacher preparation is required."

Specific Content

Half of this book focuses on hazardous waste and was not reviewed for the purpose of this study.
"Excellent materials on product packaging."
"Addresses social issues and environmental justice."

Environmental Action: Waste Reduction

Pearson Learning
299 Jefferson Road
Parsippany, NJ 07054
(800) 876-5507



\$13.95 Teacher Resource Guide (170 p.)
\$ 5.95 Student Edition (100 p.). 1998.

Designed by E2: Environment & Education, each module of the *Environmental Action* program includes a Teacher Resource Guide and Student Edition appropriate for use by both middle and secondary level students. In the *Waste Reduction* module, students sort and analyze school garbage to identify recyclable and compostable materials and later formulate a plan to reduce their consumption and waste. Activities follow a sequence that invites students to explore the issues and later, analyze them, consider options, and ultimately, take action.

REPORT CARD

Overall Grade	A-
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A different approach - action based with good background materials. Excellent use of the student workbook!"

"A good project-based learning application."

Presentation

"Well organized."

Pedagogy

Integrates cooperative learning.

"Great sequence of activities that lead to final action projects."

"I liked the action and analysis section for students to get involved."

Teacher Usability

"Background information could be more detailed."

"Student workbook pages do not always correlate directly with those of the teacher's book."

"Teacher Resource Guide is useful."

Specific Content

"In the narrow vein of waste reduction, this source is excellent."

Understanding Garbage and Our Environment

McGraw-Hill, Inc.
Customer Services
P.O. Box 545
Blacklick, OH 43004-0545
(800) 722-4726

\$19.95. 1999. 306 p.

Produced by the Center for Chemical Education at Miami University, Ohio, *Understanding Garbage and Our Environment* presents eight comprehensive lessons to help middle-school students explore solid waste management issues. These issues include the characteristics of solid waste, health concerns, source reduction, resource recovery, and waste disposal methods. Within each lesson are a number of activities, plus teacher background information, notes, student background information and instructions, and "The Garbage Gazette" student readings.



REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is a very current resource with great hands-on projects."

Presentation

"Well organized and laid out."

"I liked the format of the 'Garbage Gazette'."

Pedagogy

"An outstanding stand-alone curriculum and one that is aligned with the standards."

"Offers a variety of approaches to the problem (e.g. 'Gazette,' activities)."

Teacher Usability

"Provides helpful, well compiled information for teachers."

"Some activities may be difficult to do with groups of thirty students as they would require lots of supervision."

Specific Content

"Very current."

"Several different topics included in one workbook."

Pathways to a Sustainable Future

The Chewonki Foundation
485 Chewonki Neck Road
Wiscasset, ME 04578
(207) 882-7323



\$19.95. 1999. 198 p.

Recently revised, *Pathways to a Sustainable Future, A Curriculum Guide for Schools Exploring Waste Management Issues* presents several routes of exploration, from awareness pathways ("What is the waste problem?") to assessment pathways ("How are we doing?") to action pathways ("How can we have an impact on the waste problem?"). Designed for K-12 classrooms, the material offers background information, activities, and support material on composting, hazardous waste, recycling and reuse, source reduction, landfilling, and incineration.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	A
Teacher Usability	B
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A thought provoking curriculum with clever, interactive lessons."

Presentation

"Unique layout concept."

Pedagogy

"Concise, valuable lessons with lots of originality."

Teacher Usability

"Good background material including sections on how to guide for social action and internet resources."

"Organization needs some improvement, indexing in particular."

"Additional student materials would be helpful (handouts)."

Specific Content

"Integrated waste management topics are available for all ability levels."

People and the Planet: Lessons for a Sustainable Future

Zero Population Growth, Inc.
1400 16th Street, NW, Suite 320
Washington, DC 20036
(202) 332-2200



\$22.95. 1996. 189 p.

The interdisciplinary activities in *People and the Planet* focus on developing middle school level students' understanding of the interdependence of people and the environment on a global level. The book is organized in four sections: (1) Understanding Population Dynamics, (2) People, Resources and the Environment, (3) Issues for the Global Family, and (4) You and Your Community. Each section of the book begins with a student reading, followed by a series of activities. Integrated waste management issues are primarily addressed in section two where nature resource use, waste generation and reduction, and ethics are explored.

REPORT CARD

Overall Grade	B+
General Content	A
Presentation	B+
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"*People and the Planet* examines resource and waste issues on a global level."

"Solid waste in particular is studied in terms of impact of a growing human population."

"Innovative activities can easily be integrated into social science and science curricula."

Pedagogy

"Very sensitive to cultural and economic issues."

"Excellent background and worldwide perspectives."

Teacher Usability

"Helpful summary of activities is offered in the front."

Specific Content

"Relates waste and resource management to population issues."

"Does not address all integrated waste management concepts."

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 619 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (6-12 edition) address numerous issues including the effects of solid waste, human population growth, manufacturing by-products, and excessive packaging on the environment. Such concepts as the economics of recycling, consumer behavior, and resource recovery are explored through environmental science, social studies, language arts, mathematics, and other disciplines. Lessons are divided into two sections (grades 6-8 and 9-12) and are supported by an extensive resource section covering background information, glossary, and list of books and videos.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Economics					
Foreign Language					

COMMENTS

General Content

"*Action for a Cleaner Tomorrow* is a comprehensive curriculum, although only about one-third of the activities are for the middle school level."

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned. Binder consists of two sections (levels 6-8 and 9-12).
"Outstanding organization and layout."

Pedagogy

"Activities are relevant and interesting."
"The activities are not designed to direct the learner toward the big ideas. Lessons use activities to illustrate an example of an issue."
"Lots of hands-on activities."

Teacher Usability

"Teacher friendly format."

Specific Content

"Broad scope - very well integrated."
Specific to South Carolina in nearly all lessons, but applicable elsewhere with modification.

Solid Waste: Is There a Solution?

The New York Science Technology & Society Education Project
New York State Department of Education
89 Washington Avenue, Room 678 EBA
Albany, NY 12234
(518) 486-1726



\$3.00. 1992. 118 p.

Solid Waste: Is There a Solution? is intended for middle school science classrooms for use during a four-eight week period of study. Activities are organized in six units that examine solid waste, waste reduction strategies, reuse and recycling, waste-to-energy, landfills, and local action projects. Some of the data cited in the material pertain to New York, but could be easily modified for California classrooms. The solid waste module, like other modules in the series, is accompanied by a teacher's guide in which problem-solving and cooperative learning strategies are presented.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B
Pedagogy	A-
Teacher Usability	B
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Offers scenarios to help develop thinking skills."

Presentation

"Needs more visuals."

Pedagogy

"Well balanced [with opportunities to] empower students."

"Fun and original approaches."

"Offers interdisciplinary connections."

Teacher Usability

"Objectives are stated more clearly than in field test module."

Needs more background information and student worksheets for the activities.

Specific Content

"Designed to complement a New York State syllabus for middle schools. Some information is specific to that region."

A-Way with Waste

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue, SE
Bellevue, WA 98008



No charge. 1990. 574 p.

Quantities are limited. Permission is granted to educators to reproduce lesson plans from CIWMB masters for classroom use, provided credit is given to WSDE.

The third edition of *A-Way with Waste* offers a comprehensive collection of activities written for grades K-12. Eighty-six activities from the second edition are combined with over thirty new activities and presented in three sections: Solid Waste Management (including three subsections: Reduce, Recycle, Dispose); Hazardous Waste; and Waste and Water. Fact sheets and teacher background material introduce each section; a bibliography and glossary are provided at the conclusion.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Economics/Auto Shop					

COMMENTS

General Content

A-Way with Waste has a large variety of well laid out lessons and excellent teacher 'information at a glance'."

Presentation

"Well organized."

"The binder should be divided into smaller sections (K-6, 7-8, 9-12). It would be much easier to handle."

Pedagogy

"Offers both pre-tests and post-tests."

"Uses computers in several activities."

Activities need more opportunity for students to construct knowledge and develop meaning.

Teacher Usability

"Needs more student handouts - if students don't listen or take notes, they will miss it."

Indexing needs to be more accurate, although it is thorough (topic, age level, disciplinary emphasis, etc.).

Specific Content

"A wide range of waste topics."

An Ounce of Prevention

The Dow Chemical Company
An Ounce of Prevention
P.O. Box 1206
Midland, MI 48641-9823
(517) 636-7155



Free to educators of grades 6-9. 1997. 88 p.

Produced by the National Science Teachers Association and Dow Chemical Company, *An Ounce of Prevention* is a middle level science curriculum that focuses on source reduction and the need to conserve resources. Sequentially arranged lessons are organized in six sections, providing background information on garbage, the handling of garbage, the issue of packaging, hazardous waste, life cycle analyses (environmental effects of products and processes from a cradle-to-grave perspective), and the application of critical thinking skills to resolve an environmental dilemma.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is basically a discussion guide with good paper and pencil activities and student readings."

Pedagogy

"Activities are geared toward seventh and eighth grade students."

"Some of the student reading may prove too difficult."

"I particularly liked the Island Survival activity."

"A biased agenda on the part of the sponsor in the promotion of aseptic boxes."

Teacher Usability

"Requires few materials."

Specific Content

"Clear emphasis on reduction over the other two R's."

"Little discussion of environmental impact of trash."

Resource Cycles

San Francisco Solid Waste Management Program
1145 Market Street, Suite 401
San Francisco, CA 94103
(415) 554-3400.



No charge for educators in San Francisco. \$15.00 for all others. 1994. 147 p.

Resource Cycles: A Curriculum for Middle and High School Teachers examines natural resources, waste management, toxics, and waste reduction strategies including reducing, reusing, recycling, and composting. Twenty science-based activities are organized into four sections; a glossary and teacher resource section are also provided. While the information is regional (San Francisco), the activities could be adapted to work elsewhere.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Excellent 'minimalist' approach that covers all bases with the least duplication and resource investment."

Presentation

"Nice layout - should create interest in students."

"Well organized and sequential."

Pedagogy

"Relates society and science to the environment."

"Offers some good activities I haven't seen, i.e. 'lethal dose extrapolation'."

"Some lessons could be hard to manage with a large group."

Specific Content

Specifically addresses issues related to the City of San Francisco.

The No-Waste Anthology

Environmental Education Coordinator
California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812
(916) 324-3614



No charge to California educators. 1991. 320 p.

The No-Waste Anthology, a Teacher's Guide to Environmental Activities K-12 is a compilation of material derived from other sources, reorganized into a single document. Seventy-six activities are organized into three sections: Natural Resources and Pollution, Solid Waste, and Hazardous Waste. Teacher background information, waste glossary, and an extensive cross-correlation of activities are also provided.

REPORT CARD

Overall Grade	B+
General Content	B
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

The selection of activities integrates all areas of the curriculum.

Presentation

"Needs more graphics."

Pedagogy

"Offers a variety of activities - a useful resource book compiled from other sources."

"A few of the activities need to be updated."

Teacher Usability

Indexing by topic, grade level, and subject matter is helpful.

Specific Content

Focuses on integrated waste management and hazardous waste.

The Waste Hierarchy: Where Is “Away”?

SEPUP, Lawrence Hall of Science
University of California, Berkeley
c/o Sargent-Welch Scientific Company
911 Commerce Court
Buffalo Grove, IL 60089
(800) 727-4368



\$234.99 per kit. \$19.99 per teacher’s manual. 1993. 154 p.

The Waste Hierarchy: Where Is “Away”? applies the science of chemistry to the study of waste treatment practices for students in grades 7-12. Six activities conducted over multiple class periods allow students to explore the question “Where is away?,” experiment with the dilution of chemicals in a simulated landfill, determine the risks of ash disposal from incineration, develop criteria for selecting materials for recycling, examine source reduction, and ultimately, develop an integrated plan for managing waste. Chemicals, laboratory supplies, student activity sheets, teacher’s manual, and video are provided.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B-
Pedagogy	A-
Teacher Usability	B+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

“Excellent hands-on chemistry lessons.”
“Lots of valuable, relevant content.”

Pedagogy

“Great for a chemistry unit in which one wanted to spotlight waste concerns, but not for a general science or environmental education program.”
“Active learning using student-centered investigations.”

Teacher Usability

“Lots of teacher background information and well written student worksheets.”
“Expensive lab kits need to be purchased in order to do these activities.”

Specific Content

“Chemistry-based solid waste investigations.”

Let's Reduce and Recycle: A Curriculum for Solid Waste Awareness

United States Environmental Protection Agency
National Center for Environmental Publications and Information
P.O. Box 42419
Cincinnati, OH 45242
(800) 424-9346



No charge. 1990. 144 p.

Let's Reduce and Recycle offers a series of activities focusing on the impact of garbage on the environment and the application of waste prevention and recycling techniques. Divided into two sections, grades K-6 and 7-12, each contains five units that address the following concepts: What is Waste?, Where Does Waste Go?, How Does Waste Affect Our Resources?, How Can We Produce Less Waste?, and What Can We Do About Waste? Additional features include a glossary, a script to "Throwaway Three," list of state solid waste agencies, and educational resources.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B-
Pedagogy	B-
Teacher Usability	B
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is perhaps the most comprehensive, albeit basic and simplified, resource I've seen. For a 1990 publication, it is remarkably relevant."

Presentation

"Some good graphics."

"Each section has a lesson for grades K-6 and another for 7-12."

Pedagogy

"Lessons are repetitive and close-ended."

"Not hands-on enough."

"Vocabulary words are introduced but not defined."

Teacher Usability

"Lots of good information and ideas for lessons."

Specific Content

Let's Reduce and Recycle touches on all important aspects."

Revise, Recycle, Recover

Frost Valley YMCA
HC 55, Frost Valley Road
Claryville, NY 12725
(914) 985-2291



\$9.95. 1991. 70 p.

Revise, Recycle, Recover, Realizing Our Resources presents a series of lesson plans designed for the upper elementary through secondary level. Three general concepts of solid waste management are reinforced: (1) the revision of thought and consumer behavior, (2) the recycling of material to conserve energy, natural resources, and space, and (3) the recovery of resources as an alternative to sanitary landfills. Thirty-nine lesson plans are followed by reference sheets, a glossary, and a listing of resources and agencies.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B+
Teacher Usability	B-
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Good selection of environmental education activities - a broad base."

Pedagogy

"Offers some unique activities."

"Activities need to be more challenging (higher level thinking) for seventh and eighth grade students."

"Needs student handouts."

Teacher Usability

"Good ideas and basic information for teachers planning their own lessons."

"Great information for outdoor education."

Specific Content

"Short treatment of varied subjects but one of the few that considers the human impact on natural systems."

Living Lightly on the Planet

Schlitz Audubon Center
1111 East Brown Deer Road
Milwaukee, WI 53217
(414) 352-2880



\$24.00. 1993 (reprinted). 120 p.

The *Living Lightly* series is comprised of four volumes of environmental education material for grades K-12. For the middle level grades, *Living Lightly on the Planet, Volume I* offers activities that help students understand the global impact of human activity, examine land use issues, and take action for the stewardship of earth's resources. Lessons are organized within five units: Food for Thought, Limits to Growth, Water Reflections, Connections, Cycles, and Cities, and Small Is Beautiful.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B+
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A supplemental curriculum offering excellent concept-based instruction from a global standpoint."

"Great deep ecology exploration."

Pedagogy

"Interesting materials not seen in other curricula."

"Offers some valuable adjunct lessons not really addressing solid waste per se, but providing the foundation missing in other resources."

Teacher Usability

"Needs more student materials."

Specific Content

The primary focus of this curriculum is on human population on global systems, not integrated waste management.

Generation Earth

TreePeople
12601 Mulholland Drive
Beverly Hills, CA 90210
(818) 623-4840



\$102.00. 1999. Packaged kit.

Packaged in a canvas bag, *Generation Earth* is an environmental education program for grades 7-12 created for the Los Angeles County Department of Public Works by TreePeople. The kit features a Teacher's Action Guide divided into three parts (Overview, Activity and Support Information sections), classroom set of "A Call to Action, Generation Earth's Guide to Organizing an Environmental Action Project," fifty-four minute video, classroom set of "Choose to Reduce" guides describing methods to survey campus waste, and classroom set of consumer awareness CD-style booklets. Some of the background information is based on Los Angeles data, but could be easily be modified to fit other regions.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This serves as a good project-based learning model."

Presentation

Draft edition was reviewed for this project.

"Good photography in the handouts."

"Visually appealing to students; however, 'A Call to Action' print is too small."

The graphic design, while appealing to youth, results in large blank spaces left on several pages.

Pedagogy

"With the right and motivated instructor, I think this entirely unique and non-traditional approach can be very effective."

"Highly motivational material oriented to the group and the task."

"It presumes that instructors and students have bought into direct action."

Activities need more substance.

Teacher Usability

"The booklet on how to survey waste on campus is the best part of the curriculum."

Rethinking Recycling

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97217
(503) 229-5913



\$33.00 for entire curriculum and \$6.00 for video (no charge to Oregon educators).
1993. Packaged folder of materials.

Rethinking Recycling, an Oregon Waste Reduction Curriculum is a comprehensive package consisting of four grade group levels of Classroom Activity Packets (K-2, 3-5, 6-8, and 9-12), a Teacher Resource Guide (63 p.), recycling and waste reduction booklet (18 p.), and video, "The Recycle Lifecycle of Glass." The Teacher Resource Guide provides background information, fact sheets, reprints of articles, suggested instructional methods, and lists of additional resources. At the 6-8 level, the Classroom Activity Packet consists of related handouts and twelve lessons through which students become aware of the magnitude of waste production, consider costs and benefits of waste management solutions, and assess their own efforts to reduce the waste stream.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A very comprehensive set of materials."
"An outstanding source of data."

Presentation

"Use of the folder is not the best way to present materials."

Pedagogy

Lessons are open-ended and in need of more background information.
"Data intensive."

Teacher Usability

"Excellent teacher resource guide."
"Lessons are easy to follow."

Specific Content

"Developed for Oregon teachers."

Operation Separation

Onondaga County Resource Recovery Agency
100 Elwood Davis Road
North Syracuse, NY 13212



\$10.00. 1992. 186 p.

Operation Separation, a Recycling Curriculum for Elementary School Teachers is a set of two recycling curricula (K-6 and 7-12 grade levels) offering activities on waste reduction and recycling, organized by disciplinary emphasis. Twelve introductory pages provide an overview of recycling, some specific to Onondaga County, New York. Four units of lessons follow, providing supplementary learning opportunities in science, social studies, English, and mathematics. Appendices feature teacher fact sheets, student handouts, and bibliography.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Home Economics					

COMMENTS

Pedagogy

"Some good ideas for activities on recycling, litter, and packaging."

"Adapted for integrated science classes with an emphasis on language arts."

Teacher Usability

"Difficult to find one's way through the notebook."

Specific Content

"Some of the materials are specific to Onondaga County, New York. Teachers elsewhere would have to make modifications and get information for their geographical area."

Alabama PALS

Alabama PALS
340 North Hull Street
Montgomery, AL 36104
(334) 263-7737



No charge to Alabama educators. 1998 (9th printing). 73 p.

The *Alabama PALS (People Against a Littered State) Litter Education Activity Guide* offers a variety of awareness-level litter-related activities for elementary, middle, and high school students. The booklet provides a sampling of activities on issues ranging from visual aesthetics to health and pollution. Twelve lessons are followed by additional activities compiled from other sources. Appendix features a detailed guide to campus improvement and beautification.

REPORT CARD

Overall Grade	B-
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Home Economics					

COMMENTS

General Content

"[I liked] the action project included at the back of the manual."

Pedagogy

"Some of the activities could be used by seventh and eighth grade students."
"Provides lots of ideas for discussion."

Teacher Usability

Would help to have the manual broken down by grade level.
"Needs information on how to use the packet."

Specific Content

Focuses extensively on litter.

Economics and the Environment Eco-Detectives

National Council on Economics Education
1140 Avenue of the Americas
New York, NY 10036
(800) 338-1192



\$29.95. 1997. 128 p.

Economics and the Environment EcoDetectives is designed to help middle and secondary students apply economic reasoning to the study of environmental issues and problems. The subject matter focuses on real-life and controversial situations viewed through the perspective of economics and the application of market-based incentives. These situations include recycling, resource depletion, and the protection of endangered species. Eighteen independent activities are organized in four units: The Environment and the Economy, Incentives Matter, Using Market Forces to Improve the Environment, and Public Choice Theory and the Environmental Movement.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	C+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Economics					

COMMENTS

General Content

Eco-Detectives explores economics and the relationship of economics to the environment."

"Fascinating perspectives. I would incorporate parts of this into my environmental education curriculum, but not as core material."

Presentation

Student materials need improvement.

Pedagogy

"Superficial approach to some objectives."

"Supplemental lessons - not a cohesive curriculum."

"'Environmental Mysteries' catch student interest."

"Designed to reinforce [only] an economic perspective."

Teacher Usability

Too advanced for middle school.

Specific Content

"Only two lessons focus specifically on integrated waste management."

Activities Guide to Solid Waste and Recycling

Sacramento County Waste Management and Recycling Division
9850 Goethe Road
Sacramento, CA 95827
(916) 875-6789



No charge to educators in the unincorporated Sacramento area.
Also available to other California educators upon special request. 1995. 52 p., 74 p.

Designed for middle school, the *Activities Guide to Solid Waste and Recycling* applies science and math in one part and social studies and history in another to help students become aware of their role with natural resources and waste management. Eighteen lessons enable students to conduct a waste audit, experiment with soil permeability and landfill design, make recycled paper, practice composting and vermicomposting, and role-play as county planners. Although the curriculum uses regional (Sacramento) data, this information can be modified for application elsewhere.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B
Teacher Usability	B
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Pedagogy

"Good hands on activities."
"Activities need more depth."
"Few opportunities beyond [increasing] environmental awareness."

Teacher Usability

"Simple - user friendly."
"Both the time requirement and cognitive skills are listed for each activity."
"Good glossary."

Specific Content

"Written for Sacramento County middle schools."

Litter Prevention and Recycling

The Ohio Academy of Science
1500 West Third Avenue, Suite 223
Columbus, OH 43212
(614) 488-2228



\$10.00. 1991. 80 p.

Litter Prevention and Recycling is designed as a middle and high school level science workbook to promote student research. Extensive teacher background information, references, and resources are followed by a list of twenty-six student research projects proposed by representatives of business, industry, trade associations, government, and academic institutions. Some of the background information is based on Ohio statistics, although this does not limit the resourcefulness of the workbook.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	C+
Pedagogy	B
Teacher Usability	C+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Economics					

COMMENTS

General Content

"Not a curriculum, *Litter Prevention and Recycling* is a set of ideas for student projects."

Pedagogy

Features several new activities and suggestions for areas of study.
Student-centered.

Teacher Usability

Too advanced for middle school.
"Does not identify grade level, time commitment, discipline, etc."
"Good research ideas for high school students."
"Great for guiding independent environmental research or science fair projects."

Specific Content

"Developed for Ohio schools."
"Focuses on litter."

Pathways to a Sustainable Future

The Chewonki Foundation
485 Chewonki Neck Road
Wiscasset, ME 04578
(207) 882-7323



\$19.95. 1999. 198 p.

Recently revised, *Pathways to a Sustainable Future, A Curriculum Guide for Schools Exploring Waste Management Issues* presents several routes of exploration, from awareness pathways (“What is the waste problem?”) to assessment pathways (“How are we doing?”) and to action pathways (“How can we have an impact on the waste problem?”). Designed for K-12 classrooms, the material offers background information, activities, and support material on composting, hazardous waste, recycling and reuse, source reduction, landfilling, and incineration.

REPORT CARD

Overall Grade	A-
General Content	A-
Presentation	A-
Pedagogy	A-
Teacher Usability	A-
Integrated Waste	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

“*Pathways* offers some interesting activities including a few I haven’t seen before that would be quite useful.”

Presentation

“An attractive format with excellent graphics.”

Pedagogy

“Each activity is carried in depth, allowing for careful consideration of the many alternatives and options.”

“Excellent action activities demonstrate inclusive consideration of the school and entire community.”

Teacher Usability

“Gives excellent introductions to the goals of each activity, including the likely variations in student responses and opinions.”

“What flexibility! Each lesson seems to offer a range of responses.”

“Extensive resources including websites.”

Specific Content

“A very up to date, well organized curriculum packed with information.”

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 619 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (6-12 edition) addresses numerous issues including the effects of solid waste, human population growth, manufacturing by-products, and excessive packaging on the environment. Such concepts as the economics of recycling, consumer behavior, and resource recovery are explored through environmental science, social studies, language arts, mathematics, and other disciplines. Lessons are divided into two sections (grades 6-8 and 9-12) and are supported by an extensive resource section covering background information, glossary, and list of books and videos.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A comprehensive curriculum with interesting activities and a focus on practical student-led action."

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned.
"Nice diagrams."

Pedagogy

"Offers many open-ended opportunities for students to make their own meaning and choices about issues."

Teacher Usability

"Some of the activities are specific to South Carolina and may require extra work to gather applicable statistics."

Specific Content

"Varied and interesting approaches to study integrated waste management topics."

Exploring Environmental Issues: Municipal Solid Waste

Project Learning Tree
American Forest Foundation
1111 19th Street, NW, Suite 780
Washington, DC 20036
(202) 463-2462



No charge to educators who participate in a workshop. 1997. 136 p.

As one module in Project Learning Tree's secondary environmental education program, *Exploring Environmental Issues: Municipal Solid Waste* is designed to help students in grades 9-12 explore the management of solid waste and implications of the current waste dilemma. Eight interdisciplinary activities focus on the development of critical thinking skills which ultimately help students realize the connections among the products they purchase, the natural resources they consume, and the waste they generate. This module also features extensive background sections and numerous appendices.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Another PLT success!"

Pedagogy

"Activities connect to the students' real lives."

"PLT has the basics down. It is ready, therefore, to address more sensitive issues such as environmental justice and sociogeographical differences in resource use and waste production."

Teacher Usability

"Rich in background information and data."

"Extensive listing of resources: bibliography, glossary, metric conversion table, conceptual framework, and websites."

Specific Content

"Lots of examples of good work by grassroots organizations."

"An excellent resource for solid waste."

San Diego, A World in Harmony

I Love A Clean San Diego
4355 Ruffin Road, Suite 118
San Diego, CA 92123
(858) 467-0103



No charge beyond \$5.00 postage. 1994. 494 p.

San Diego, A World in Harmony, An Environmental Awareness Curriculum for Grades 7-12 addresses such ecological issues as water conservation, recycling, urban runoff, and composting. Using San Diego as the setting, the material is designed to challenge students to examine the relationship between their local environment and their behavior, and take individual action to effect positive change. Current waste disposal issues, waste reduction strategies, litter, and recycling are explored through a number of multidisciplinary activities.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This curriculum provides a good waste management overview, including examining various aspects of 'cradle to grave'."

Presentation

"Clean, organized copy."

Pedagogy

"I thought the 'Adaption for Students with Special Needs' section was an excellent addition!"

"Needs additional activities with higher-order thinking skills."

Teacher Usability

"Rich in background information and data."

"Extensive listing of resources: bibliography, glossary, metric conversion table, conceptual framework, and websites."

Specific Content

"Examples cited are specific to San Diego."

Earth Matters: Studies for Our Global Future

Zero Population Growth, Inc.
1400 16th Street, NW, Suite 320
Washington, DC 20036
(202) 332-2200



\$19.95. 1998. 208 p.

The second edition of *Earth Matters* offers twelve student readings and thirty-four interdisciplinary activities that focus on global environmental and social issues including population dynamics, deforestation, waste disposal, pollution, climate change, energy issues, and economics. Students complete a reading before participating in the corresponding activities, many of which present role-playing simulations, cooperative learning projects, and laboratory experiments. One chapter focuses on waste disposal.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Waste reduction is only a small part of the curriculum. Nevertheless, it is well supported with student readings and background information. *Earth Matters* is unique in that it uses basic environmental concepts, including waste reduction, to increase students' understanding of the global issues surrounding human population dynamics." "Although little of this work is specific to integrated waste management, the entire volume is a must for teachers who want to explore global and local interconnections related to environmental issues."

Pedagogy

"Most of the material is taught through simulations and games." "Lessons are connected to the big picture." "A very helpful tool to understand the global perspective."

Teacher Usability

"Rich in background information."

Specific Content

Earth Matters is a comprehensive environmental education curriculum; waste management, however, is only a small part of it.

Environmental Protection Native American Lands

Center for Indian Community Development
Humboldt State University
Arcata, CA 95521
(707) 826-3711



\$25.00. 1996. 290 p.

Environmental Protection Native American Lands: A Cultural Approach to Integrated Environmental Studies is designed to cultivate a sense of place by studying the relationship between human activity and the land. Fifty-two lessons for grades 1-12 build upon Native American traditions and beliefs, specifically reflecting the cultures of the Hupa, Karuk, and Yurok people of northern California. Integrated waste management issues, including solid waste and pollution, and waste management practices, including recycling, composting, and vermiculture are explored throughout the curriculum.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	A-
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A wide scope with lots of simple experiments."

"Activities are well set in the cultural domain of the curriculum's primary audience."

"Very comprehensive in environmental topics."

Presentation

Visually appealing.

Pedagogy

"A wide variety of interesting activities."

"A refreshing 'feel' to it with its Native American concepts and stories."

Teacher Usability

"Experienced teachers can judge times needed for the lessons."

"Clearly presented activities with essential background information."

Waste: A Hidden Resource

Keep America Beautiful, Inc.
1010 Washington Blvd.
Stamford, CT 06901
(203) 323-8987



\$40.00. 1993. 224 p.

The lessons featured in the second edition of *Waste: A Hidden Resource* are designed to be infused into the secondary curriculum through language arts, mathematics, science, and social studies. Arranged in three sections, solid waste issues, solid waste solutions, and enrichment activities, thirty-four lessons focus on making students more aware of the sources of municipal waste, its characteristics, and the various options for handling it. *Waste: A Hidden Resource* also features a glossary and reference list.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A rich resource! Large number of high quality activity-based lessons."

Pedagogy

"Good learning prompts... activities that may lead into integrated thoughtful lessons."

"The math is grade level (9-12) appropriate. In most activities there are good opportunities for a depth of understanding."

Teacher Usability

"This curriculum could benefit from increased background information for the teacher."

Specific Content

"An excellent overview of waste and resource consumption."

Cycles for Science

Steel Recycling Institute
Foster Plaza, Number 10
680 Andersen Drive
Pittsburgh, PA 15220
(800) 876-7274



\$12.75. 1996. 30 - 58 p. per booklet.

Designed as a curriculum supplement for grades 9-12, the *Cycles for Science* kit consists of "The World of Steel" video and five booklets: General/Earth Science, Chemistry, Physics, Biology, and Community Volunteer Projects. Each booklet offers a series of activities oriented to a specific scientific discipline that explore steel, steel can recycling, and solid waste handling practices. In the Community Volunteer Projects booklet, case studies, project ideas, and worksheets focus on specific environmental and recycling service opportunities.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Excellent treatment of basic environmental science, chemistry, biology, and physics."
"An amazing collection of activities."
"Designed as a curriculum supplement."

Pedagogy

"Good background information for students."
"Extremely well integrated between the scientific disciplines and the culminating volunteer project selections."
"Activities are practical and applicable to students' lives."

Teacher Usability

"Very practical - real world applications in the booklets."

Specific Content

"The 'narrowness' of its focus is its strength. It applies waste management concepts into areas (biology, etc.) where it often doesn't appear."

Environmental Action: Waste Reduction

Pearson Learning
299 Jefferson Road
Parsippany, NJ 07054
(800) 876-5507



\$13.95 Teacher Resource Guide (170 p.)
\$ 5.95 Student Edition (100 p.) 1998.

Designed by E2: Environment & Education, each module of the *Environmental Action* program includes a Teacher Resource Guide and Student Edition appropriate for use by both middle and secondary level students. In the *Waste Reduction* module, students sort and analyze school garbage to identify recyclable and compostable materials and later formulate a plan to reduce their consumption and waste. Activities follow a sequence that invites students to explore the issues and later, analyze them, consider options, and ultimately, take action.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B+
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

Waste Reduction consists of a teacher's guide and student workbook, designed as a supplement to an existing curriculum.

Presentation

"Attractive layout."

Pedagogy

"Hands-on student activities offer promise."
"The first 'Explore' section with student log is a good start."

Teacher Usability

"Very easy to use - both teacher and student friendly."

Specific Content

Activities focus specifically on campus and home waste management issues.

A-Way with Waste

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue, SE
Bellevue, WA 98008



No charge. 1990. 574 p.

Quantities are limited. Permission is granted to educators to reproduce lesson plans from CIWMB masters for classroom use, provided credit is given to WSDE.

The third edition of *A-Way with Waste* offers a comprehensive collection of activities written for grades K-12. Eighty-six activities from the second edition are combined with over thirty new activities and presented in three sections: Solid Waste Management (including three subsections: Reduce, Recycle, Dispose); Hazardous Waste; and Waste and Water. Fact sheets and teacher background material introduce each section; a bibliography and glossary are provided at the conclusion.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"An extensive curriculum with lots of activities."

"Very comprehensive!"

Pedagogy

"Varied and interesting activities - strong on active learning."

"Lessons are identified as ranging from K-12, but those at 9-12 appear weak."

Teacher Usability

"Organization into smaller numbers of grade levels in separate binders would be helpful."

Specific Content

A-Way with Waste offers a large number of lessons covering all aspects of integrated waste management.

Rethinking Recycling

Oregon Department of Environmental Quality
811 SW Sixth Avenue
Portland, OR 97217
(503) 229-5913



\$33.00 for entire curriculum and \$6.00 for video (no charge to Oregon educators).
1993. Packaged folder of materials.

Rethinking Recycling, an Oregon Waste Reduction Curriculum is a comprehensive package consisting of four grade group levels of Classroom Activity Packets (K-2, 3-5, 6-8, and 9-12), a Teacher Resource Guide (63 p.), recycling and waste reduction booklet (18 p.), and video, "The Recycle Lifecycle of Glass." The Teacher Resource Guide provides background information, fact sheets, reprints of articles, suggested instructional methods, and lists of additional resources. At the 9-12 level, the Classroom Activity Packet consists of twelve lessons and related handouts that introduce students to the concept of integrated waste management and help them personally accept responsibility for the resolution of waste problems.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Complete and concise. Created for Oregon, but applicable anywhere once the appropriate data are obtained."

Presentation

"I would prefer a format (like a binder) that allows for a quick review of material."

Teacher Usability

"The resource materials are strong and offer a good background to varied subjects and approaches."

"Suggests simple and inexpensive activities."

"Resource list needs to be updated."

The Waste Hierarchy: Where Is “Away”?

SEPUP, Lawrence Hall of Science
University of California, Berkeley
c/o Sargent-Welch Scientific Company
911 Commerce Court
Buffalo Grove, IL 60089
(800) 727-4368



\$234.99 per kit. \$19.99 per teacher's manual. 1993. 154 p.

The Waste Hierarchy: Where Is “Away”? applies the science of chemistry to the study of waste treatment practices for students in grades 7-12. Six activities conducted over multiple class periods allow students to explore the question “Where is away?,” experiment with the dilution of chemicals in a simulated landfill, determine the risks of ash disposal from incineration, develop criteria for selecting materials for recycling, examine source reduction, and ultimately, develop an integrated plan for managing waste. Chemicals, laboratory supplies, student activity sheets, teacher's manual, and video are provided.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B+
Teacher Usability	B+
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

“A very good environmental science curriculum with a strong emphasis on chemistry.”
“Chemical processes and concepts are clearly integrated into believable contexts.”

Presentation

“It's all in one box. Convenient!”
“Very organized.”

Pedagogy

“Activity-based. Fun manipulatives. Students have a sense of really doing science.”
“Hands-on activities using laboratory materials.”
“Presents current data.”

Teacher Usability

Very useful for a science class.
“Teachers will need to replace chemicals with each use.”
“Teacher directions are voluminous.”

Specific Content

“An extensive look at incineration and sanitary landfills.”

Cycling Back to Nature with Biodegradable Polymers

National 4-H Supply Service
7100 Connecticut Avenue
Chevy Chase, MD 20815-4999
(301) 961-2934



\$5.00. 1996. 68 p.

Packaged in a biodegradable bag later used in the lessons five and six, "*Cycling Back to Nature with Biodegradable Polymers*" addresses the environmental influence of natural products, manufactured products, and by-products on the earth's natural cycles. The book is intended for use in the 4-H Environmental Stewardship program, but can be used effectively in the traditional 10-12 grade classroom as well. Activities are organized in nine sections which explore natural cycles, the impact of disturbing natural cycles, reasons to recycle, natural-tech solutions including plastics from the carbon cycle, and the development of a package-wise public.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Although limited in scope, the content is thorough. It takes a comprehensive look at one aspect of solid waste - packaging and its alternatives."

Presentation

"Clean, concise, and well laid out."
"Attractive format."

Pedagogy

"The objectives, discussions, and activities are tied together well."

Teacher Usability

"Could be useful in a science class, experimenting with a product for sale."

Specific Content

"Interesting recipes with an emphasis on plastics."
"A good treatment of source, product, and waste reduction using plastics as an example."

Generation Earth

TreePeople
12601 Mulholland Drive
Beverly Hills, CA 90210
(818) 623-4840



\$102.00. 1999. Packaged kit.

Packaged in a canvas bag, *Generation Earth* is an environmental education program for grades 7-12 created for the Los Angeles County Department of Public Works by TreePeople. The kit features a Teacher's Action Guide divided into three parts (Overview, Activity and Support Information sections), classroom set of "A Call to Action, Generation Earth's Guide to Organizing an Environmental Action Project," fifty-four minute video, classroom set of "Choose to Reduce" guides describing methods to survey campus waste, and classroom set of consumer awareness CD-style booklets. Some of the background information is based on Los Angeles data, but could be easily be modified to fit other regions.

REPORT CARD

Overall Grade	B
General Content	B
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"While not really a curriculum, it is a great 'sparker.' This is project-based learning grounded in real-life experiences."

Presentation

Draft edition was reviewed for this project.

"Nice colors!"

"Great choice of photographs and format."

Pedagogy

"I see this as a way for students to use content knowledge to take action."

"Needs more hands-on lessons."

Teacher Usability

"Materials are highly accessible to a very diverse student audience. There is a conversational tone to the text. I like the student booklets - they lend a feeling of ownership to the student projects."

Specific Content

Data are based on the Los Angeles region.

The No-Waste Anthology

Environmental Education Coordinator
California Department of Toxic Substances Control
P.O. Box 806
Sacramento, CA 95812
(916) 324-3614



No charge to California educators. 1991. 320 p.

The No-Waste Anthology, a Teacher's Guide to Environmental Activities K-12 is a compilation of material derived from other sources, reorganized into a single document. Seventy-six activities are organized into three sections: Natural Resources and Pollution, Solid Waste, and Hazardous Waste. Teacher background information, waste glossary, and an extensive cross-correlation of activities are also provided.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B
Pedagogy	B
Teacher Usability	B
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"This is an activity-oriented collection of resources."

"An excellent source of information for upper grade levels, including secondary."

Presentation

"Articles cited are older. References need to be updated."

Pedagogy

While a useful anthology, "there is little reference to conceptual understanding. It is collection of lessons about topics."

Teacher Usability

"Format is straightforward and easy to use."
"Not enough background information."

Revise, Recycle, Recover

Frost Valley YMCA
HC 55, Frost Valley Road
Claryville, NY 12725
(914) 985-2291



\$9.95. 1991. 70 p.

Revise, Recycle, Recover, Realizing Our Resources presents a series of lesson plans designed for the upper elementary through secondary level. Three general concepts of solid waste management are reinforced: (1) the revision of thought and consumer behavior, (2) the recycling of materials to conserve energy, natural resources, and space, and (3) the recovery of resources as an alternative to sanitary landfills. Thirty-nine lesson plans are followed by reference sheets, a glossary, and a listing of resources and agencies.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B
Pedagogy	B
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Although this is a 1991 publication written for New York, there are several activities that are suitable - more so for the middle grades than high school level."

Presentation

"User friendly with great artwork."
"An attractively packaged collection of lessons."

Pedagogy

"Filled with many active learning modules that can support constructed knowledge."

Teacher Usability

"May be difficult to adapt all materials to the high school level."
"Material for limited-English speaking students is offered."

Let's Reduce and Recycle: A Curriculum for Solid Waste Awareness

United States Environmental Protection Agency
National Center for Environmental Publications and Information
P.O. Box 42419
Cincinnati, OH 45242
(800) 424-9346



No charge. 1990. 144 p.

Let's Reduce and Recycle offers a series of activities focusing on the impact of garbage on the environment and the application of waste prevention and recycling techniques. Divided into two sections, grades K-6 and 7-12, each contains five units that address the following concepts: What is Waste?, Where Does Waste Go?, How Does Waste Affect Our Resources?, How Can We Produce Less Waste?, and What Can We Do About Waste? Additional features include a glossary, a script to "Throwaway Three," a list of state solid waste agencies, and educational resources.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B-
Integrated Waste	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science		—			
Health		—			
Mathematics		—			
Visual/Performing Arts		—			
Language Arts		—			
Industrial/Vocational Ed.		—			
Foreign Language		—			

COMMENTS

General Content

"Comprehensive in a narrow scope."

Presentation

"Graphics may be viewed as too young for high school kids."

Pedagogy

"Filled with many active learning modules that can support constructed knowledge."

Teacher Usability

"Offers easily accessible lessons and a simple format."

"Lots of reference lists."

Specific Content

"Focuses on solid waste management."

Economics and the Environment Eco-Detectives

National Council on Economics Education
1140 Avenue of the Americas
New York, NY 10036
(800) 338-1192



\$29.95. 1997. 128 p.

Economics and the Environment EcoDetectives is designed to help middle and secondary students apply economic reasoning to the study of environmental issues and problems. The subject matter focuses on real-life and controversial situations viewed through the perspective of economics and the application of market-based incentives. These situations include recycling, resource depletion, and the protection of endangered species. Eighteen independent activities are organized in four units: The Environment and the Economy, Incentives Matter, Using Market Forces To Improve the Environment, and Public Choice Theory and the Environmental Movement.

REPORT CARD

Overall Grade	B-
General Content	B
Presentation	B-
Pedagogy	B-
Teacher Usability	B
Integrated Waste	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science		—			
History/Social Science					
Health		—			
Mathematics					
Visual/Performing Arts		—			
Language Arts					
Economics					
Foreign Language		—			

COMMENTS

General Content

"Uses environmental topics as themes for teaching economics."

Pedagogy

"Curriculum makes 'gross' assumptions about personal behavior and values with an economic inclination. It assumes that economic principles determine human behavior and that humans do not make value choices that lack an economic incentive."

Teacher Usability

"Excellent background information on evaluating environmental issues economically."

"This curriculum is intended to encourage the use of resources without concern for sustainability or quality of life."

Specific Content

"An interesting outlook although it conflicts with traditional environmental ethics."

"Good ideas for investigating economic aspects of waste management."

Every Drop Counts

Chula Vista Nature Center
1000 Gunpowder Point Drive
Chula Vista, CA 91910-1201
(619) 422-2481

\$15.00. 1994. 54 p.

Designed for grades 4-6, *Every Drop Counts* integrates the recycling of used motor oil into the context of watershed and wetlands. The lessons are specific to San Diego County; the geographic features, waterways, and animal life mentioned in the material pertain to San Diego Bay and the surrounding environment. Some of the lessons could, however, be adapted to other regions, including the storm drain walk and water pollution experiment.



REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	A-
Teacher Usability	B
Used Oil	B-

DISCIPLINE	EMPHASIS	0	1	2	3
Science		_____			
History/Social Science		_____			
Health		_____			
Mathematics		_____			
Visual/Performing Arts		_____			
Language Arts		_____			
Industrial/Vocational Ed.		—			
Foreign Language		—			

COMMENTS

General Content

"This is a collection of activities to prepare students for a visit to a particular wetlands that must deal with 'oil spill realities'."

Pedagogy

"The materials are 'choppy'."

"This is more a collection of activity packets than a full curriculum."

Teacher Usability

"Very informative background section in the front of the curriculum."

"It would be helpful if this packet had a cover page listing each activity and its objectives."

Specific Content

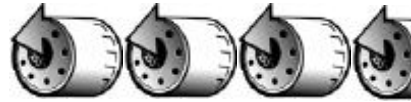
Every Drop Counts identifies lots of good community resources, but most are limited to the San Diego area."

"It is focused on the San Diego Bay, but other regions could use this as a model to create their own regional curriculum."

While the activities are interesting, there is little used oil content in them.

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 619 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (grades 6-12 edition) address numerous issues including the environmental effects of solid waste, human population growth, manufacturing by-products, excessive packaging, and motor oil. Lessons are divided into two sections (grades 6-8 and 9-12) and are supported by an extensive resource section covering background information, glossary, and list of books and videos. One subsection focuses on recycling used oil and includes lessons that detail the proper way to collect and recycle engine oil, compute the energy savings from recycling oil, and analyze the effects of mismanaged used oil. Report card scores are directed at the 7-9 level for used oil.

REPORT CARD

Overall Grade	B+
General Content	A-
Presentation	B+
Pedagogy	B+
Teacher Usability	B+
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

A cohesive and organized look at used oil issues.

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned.
"Nice presentation."

Pedagogy

"[Used oil lessons] are brief."
"Needs more labs and other science activities."

Teacher Usability

"Needs to list lab time for activities."

Specific Content

"Presents some good data on oil spills and how oil is recycled."

Used Oil Recycling, A Complete Curriculum

Florida Department of Environmental Protection
Hazardous Waste Management Section
2600 Blair Stone Road
Tallahassee, FL 32399
(850) 488-0300



\$256.00 per kit. 1990. 115 p. teacher's guide.

Product is of limited availability. Permission is granted to educators to reproduce lesson plans for classroom use, provided credit is given to FDEP.

Designed for 7-12 grades, *Used Oil Recycling, A Complete Curriculum* offers a video, poster, used oil display, and teacher's guide with background information, transparency masters, student guide, and lesson plans organized by grade-group level. The material provides an overview of the used oil recycling process, including the formation, drilling, and refining of crude oil, economic and environmental issues of disposal practices, and the collection, transportation, reclamation, and reuse of used oil. Report card scores are directed at the 7-9 level.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B-
Pedagogy	B
Teacher Usability	B
Used Oil	A-

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Valuable resource guide for oil recycling."
Six lessons are provided at the middle school level.

Pedagogy

"[Lab activities] follow the scientific method."

Teacher Usability

"Great background information and lessons are written at a grade appropriate level."

Specific Content

Emphasis is upon the collection and use of used oil, not the chemistry of oil. From the perspective of used oil, it is comprehensive. Some of the information is specific to Florida.

Put Used Oil in Its Place

Utah Department of Environmental Quality
Division of Solid and Hazardous Waste
P.O. Box 144880
Salt Lake City, UT 84114
(801) 538-6170

No charge. 1995. 38 p.

Put Used Oil in Its Place is designed to introduce students in grades 6-12 about various aspects of used motor oil, including its proper management and the consequences of its improper disposal. Teacher background material is followed by five lessons entitled Oil and Water, Why Oil and Water Don't Mix, Changing the Way You Change Your Oil, Slipping up on Used Oil, and Getting the Word out about Used Oil. An extensive glossary is also provided. Report card scores are directed at the 7-9 level.



REPORT CARD

Overall Grade	B
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Driver's Education					

COMMENTS

General Content

"Good basic information on changing and recycling oil properly."
"Relatively thorough."

Presentation

"Illustrations and student handouts are needed!"

Pedagogy

"Lesson plans are written at grade level."

Teacher Usability

"Good background information on aspects of used oil."
"Good reference books for teaching about oil in high school driver's education classes."

Specific Content

"Interesting facts about what is in oil (additives)."

Student and Teacher Guide to Recycling Used Oil

Pennsylvania Used Oil Recycling Information Center
Division of Municipal and Residual Waste
P.O. Box 8472
Harrisburg, PA 17105
(717) 787-7581

No charge. 1992. 77 p.

Designed for grades 7-12, the *Student and Teacher Guide to Recycling Used Oil* provides an overview of the used oil recycling process, beginning with an explanation of the crude oil cycle and concluding with a discussion of the reuse of recycled used oil. After a comprehensive teacher background section, the lesson plans, organized by grade-group level and special interest (driver's education) are presented. Step-by-step procedures for changing and disposing of motor oil are also provided. Report card scores are directed at the 7-9 level.



REPORT CARD

Overall Grade	B
General Content	B
Presentation	B-
Pedagogy	B
Teacher Usability	B
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Driver's Education					

COMMENTS

General Content

"The content of this curriculum matches that of Florida's *Used Oil Recycling*."

Presentation

"Good graphics."

"Student packet has too much text and not enough visuals."

Pedagogy

"Very technical for 7th and 8th grade students."

Teacher Usability

"Good background information."

Specific Content

"Only includes three lessons for middle school. It is written for Pennsylvania teachers and some of the background information is specific to that region."

Earth Resources - A Case Study: Oil

California Integrated Waste Management Board
Public Education and Assistance Section
8800 Cal Center Drive, Mail Station #5
Sacramento, CA 95826
(916) 255-2385



No charge to California educators who participate in a workshop. 1998. 534 p.

Designed as a nine to twelve week unit, *Earth Resources - A Case Study: Oil* enables ninth and tenth grade students to explore scientific concepts and environmental issues associated with the management of natural resources, using a case study of motor oil. Upon completion of a workshop, teachers receive the Earth Resources curriculum kit that includes the curriculum binder, video, posters, information booklets, and laboratory materials used in student investigations. Lessons are organized in four sections: Locating, Acquiring, and Processing Our Earth's Resources, Using Our Earth Resources, Disposing of Our Earth's Resources, and Reducing, Reusing, and Recycling Our Earth Resources. Report card scores are directed at the 7-9 level.

REPORT CARD

Overall Grade	A-
General Content	A-
Presentation	A-
Pedagogy	A-
Teacher Usability	A-
Used Oil	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"It's so complete - background information, conceptual framework, pedagogy!"
"Quite comprehensive. Activities cover a wide range for science classroom use."

Presentation

"A friendly format."

Pedagogy

"Some lessons are constraining and may need to be more open-ended."
"A rich resource. The students' conceptual understanding is clear and instructional strategies effectively directed."

Teacher Usability

"A very clean, concise curriculum; well organized and easy to use."
"Detailed crib notes provides directions for each lab."
"Good assembly of hard to find resources."

Specific Content

A comprehensive used oil curriculum.
"A complete treatment of oil (geology, chemistry, etc.)"

Oil's Well That Ends Well

City of Fremont
Environmental Services Division
39550 Liberty Street, PO Box 5006
Fremont, CA 94537-5006
(510) 494-4740



Price to be determined. 1997. 90 p.

This secondary level curriculum is designed to increase students' awareness of the issues surrounding used motor oil. Oil is examined as a finite natural resource requiring conservation and safe handling. Three lessons are offered in each of the four modules. Module I focuses are the origin of oil, Module II deals with the oil refining process and proper disposal of used oil, Module III studies the consequences of improper disposal of used oil and importance of used oil recycling, and Module IV provides tools to help students find solutions to the used motor oil problem. Report card scores are directed at the 10-12 level.

REPORT CARD

Overall Grade	B+
General Content	B+
Presentation	B+
Pedagogy	B+
Teacher Usability	A-
Used Oil	A

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A clear, concise manual about oil awareness."

Presentation

"Graphics help describe the processes."

Pedagogy

"Nice hands-on experiments."

Teacher Usability

"It is divided into modules and lessons that can either stand alone or be integrated into an existing curriculum."

"Easy to follow instructions."

"Good background information, although some of the activities are weak."

Specific Content

"A thorough look at oil from 'cradle to grave'."

"Highly appropriate for auto shop and other vocational education courses."

Action for a Cleaner Tomorrow

South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(800) 768-7348



No charge. 1998. 619 p.

Revised in 1998, *Action for a Cleaner Tomorrow* (grades 6-12 edition) address numerous issues including the environmental effects of solid waste, human population growth, manufacturing by-products, excessive packaging, and motor oil. Lessons are divided into two sections (grades 6-8 and 9-12) and are supported by an extensive resource section covering background information, glossary, and a list of books and videos. One subsection at the 9-12 grade level focuses on recycling used oil and includes lessons that detail the proper way to collect and recycle engine oil, compute the energy savings from recycling oil, and analyze the effects of mismanaged used oil. Report card scores are directed at the 10-12 level.

REPORT CARD

Overall Grade	B
General Content	B+
Presentation	B
Pedagogy	B
Teacher Usability	B
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"Offers activities for a variety of disciplines."
"The social sciences are well represented."

Presentation

Since this compendium project, *Action for a Cleaner Tomorrow* has been redesigned.

Pedagogy

"Activities could use more directed action elements."

Teacher Usability

"Interesting, but limited background information."
"Very clear, easy to follow."
"Many lessons from which to draw."

Specific Content

Covers a range of used oil issues.

Used Oil Recycling, A Complete Curriculum

Florida Department of Environmental Protection
Hazardous Waste Management Section
2600 Blair Stone Road
Tallahassee, FL 32399-2400
(850) 488-0300



\$256.00 per kit. 1990. 115 p. teacher's guide.

Product is of limited availability. Permission is granted to educators to reproduce lesson plans for classroom use, provided credit is given to FDEP.

Designed for 7-12 grades, *Used Oil Recycling, A Complete Curriculum* offers a video, poster, used oil display, and teacher's guide with background information, transparency masters, student guide, and lesson plans organized by grade-group level. The material provides an overview of the used oil recycling process, including the formation, drilling, and refining of crude oil, economic and environmental issues of disposal practices, and the collection, transportation, reclamation, and reuse of used oil. Report card scores are directed at the 10-12 level.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B-
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Presentation

"Layout needs improvement."

"Nice visuals of the properties of new versus used oil."

Pedagogy

"While the content is factual, lessons do not offer opportunities for analytical thinking on the part of the student."

Teacher Usability

"The resources and data mentioned need to be updated. EPA 'regs' have changed."

Specific Content

"Thorough and specific in the treatment of used oil as both a resource and waste product."

Put Used Oil in Its Place

Utah Department of Environmental Quality
Division of Solid and Hazardous Waste
P.O. Box 144880
Salt Lake City, UT 84114
(801) 538-6170



No charge. 1995. 38 p.

Put Used Oil in Its Place is designed to introduce students in grades 6-12 about various aspects of used motor oil, including its proper management and the consequences of its improper disposal. Teacher background material is followed by five lessons entitled Oil and Water, Why Oil and Water Don't Mix, Changing the Way You Change Your Oil, Slipping up on Used Oil, and Getting the Word out about Used Oil. An extensive glossary is also provided. Report card scores are directed at the 10-12 level.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B
Used Oil	B+

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

General Content

"A quick and straightforward 'unit' on recycling used oil."

Pedagogy

"Activities demonstrate principles."

Teacher Usability

"It consists of five activities - probably suitable for auto shop students only."
"Though short and simple, the activities are thorough and would be very easy to implement."

Specific Content

"Although written for Utah, it is completely usable elsewhere."

Student and Teacher Guide to Recycling Used Oil

Pennsylvania Used Oil Recycling Information Center
Division of Municipal and Residual Waste
P.O. Box 8472
Harrisburg, PA 17105
(717) 787-7581



No charge. 1992. 77 p.

Designed for grades 7-12, the *Student and Teacher Guide to Recycling Used Oil* provides an overview of the used oil recycling process, beginning with an explanation of the crude oil cycle and concluding with a discussion of the reuse of recycled used oil. After a comprehensive teacher background section, lesson plans, organized by grade-group level and special interest (driver's education) are presented. Step-by-step procedures for changing and disposing of motor oil are also provided. Report card scores are directed at the 10-12 level.

REPORT CARD

Overall Grade	B-
General Content	B-
Presentation	B-
Pedagogy	B-
Teacher Usability	B-
Used Oil	B

DISCIPLINE	EMPHASIS	0	1	2	3
Science					
History/Social Science					
Health					
Mathematics					
Visual/Performing Arts					
Language Arts					
Industrial/Vocational Ed.					
Foreign Language					

COMMENTS

Presentation

Format is in need of improvement.

Pedagogy

"This piece needs more opportunities for applied thinking."

"Dramatic activities! I like the 'How to Change Your Own Oil' lesson."

This curriculum could be used in a driver's education class.

Specific Content

Specific oil issues that are addressed include the recycling of used motor oil, oil as a non-renewable resource, and the environmental impact of improper disposal.

Overview

Environmental Education Curriculum and Compendium Project

During the last twenty years, a vast number of environmental education materials have been developed in the United States for grades K-12. Produced by a variety of individuals, agencies, and institutions, these curricula are of varying quality and value to the classroom teacher. For teachers, to select and implement suitable curricula is, at best, a demanding, complex, and challenging process. To facilitate and encourage the implementation of high quality curricula, the Office of Environmental Education within the California Department of Education (CDE) instituted the Curricula and Compendia Project. A project advisory group, made up of representatives from a number of state agencies and offices, established the following project tasks: (1) collect curricula through nation-wide searches; (2) evaluate the quality of curricula using an appropriate assessment instrument; (3) publish the results of the evaluations in topic-specific compendia that use a descriptive, ranking format; and (4) develop and implement strategies for distribution of the publications to educators across California.

To make this curriculum review manageable, seven topic areas were logically delineated: Energy Resources, Water Resources, Integrated Waste Management, Air Quality, Human Communities, Plant and Animal Communities, and Terrestrial and Aquatic Habitats (the latter two were later combined to form Natural Communities). The Energy Resources and Water Resources compendia were first published in 1992 and subsequently revised in 1996. The Air Quality and Human Communities compendia were published in 1994, and the Natural Communities compendium was published in 1995. Originally published in 1993, the Integrated Waste Management compendium is the most recent compendium to undergo a revision, resulting in the inclusion of an entirely new section on used oil.

The evaluation phase of the Curricula and Compendia Project utilizes four strategies: (1) development of a “Unifying Concepts of Environmental Education” matrix by the CDE to serve as a cornerstone linking

the project’s six topics; (2) formation of an advisory group of experts for each project to create a topical “Conceptual Matrix” that aligns to the Unifying Concepts; (3) elaboration of topic-specific curriculum evaluation questions that are directly correlated to the “Conceptual Matrix”; and (4) systematic evaluation and ranking of environmental education curricula. When considered together, the conceptual matrices for the six compendia provide an extensive, yet cohesive, foundation upon which curriculum writers, environmental educators, and school administrators can base further instructional materials development in environmental education.

Conceptual Matrices for Environmental Education

The “Unifying Concepts of Environmental Education,” the “Conceptual Matrix for Integrated Waste Management,” and “Conceptual Matrix for Used Oil” illustrated on the following pages are based upon the CDE environmental education philosophy described in the policy paper, “Point of View on Environmental Education” (1990). The “Unifying Concepts of Environmental Education” serve to provide a conceptual foundation for defining the boundaries of all environmental education. On the “X” axis are found three content descriptors: “The Natural Environment,” “The Built Environment,” and “The Personal Environment.” On the “Y” axis are three process skills that encompass the full range of cognitive and affective change: “Fostering Awareness,” “Understanding Concepts,” and “Taking Action.”

In the conceptual matrices for this compendium, these nine core concepts define the boundaries of, and expectations for, integrated waste management and used oil curricula. Because environmental education is an interdisciplinary subject, the basic concepts of both these topical areas correspond, to some degree, to all of the frameworks and content standards for California public schools and reflect the philosophy of the California Education Code. Framework correlations are documented on page 206 and content standard correlations are documented on page 207.

Unifying Concepts of Environmental Education

<div>CONTENT</div> <div>PROCESS</div>	NATURAL ENVIRONMENT Natural Systems and Interactions	BUILT ENVIRONMENT Human Alterations to Natural Systems	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions
FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT	Environmentally aware citizens cultivate in themselves and others a deep appreciation for natural systems and personal interactions with the natural environment.	Members of sustainable human communities value the natural environment and recognize human-kind's ultimate dependence upon renewable and non-renewable resources.	Individuals appreciate the dependence of their quality of life upon the distribution and quality of natural resources, which may be regulated by laws and influenced by local interests, cultural values, political climate, and international relations.
UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS	Individuals understand the relationship between the living and non-living components of natural systems.	Humans understand how they alter the natural and built environments. As human populations increase, their impacts on the global environment are more pronounced.	Individuals, communities, and societies understand and honor the symbiotic relationship between the natural and built environments such that a sustainable global community is created.
TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT	Individuals take responsible, knowledgeable actions to restore, conserve, and protect the integrity of natural systems and interactions.	Members of sustainable human communities learn from past experiences, acknowledge human limitations, anticipate changes, and develop innovative systems to conserve resources and promote the viability of both the natural and built environments.	Informed citizens influence the development of a sustainable global community through individual and collective actions, civic and organizational responsiveness, lifestyle choices, cultural sensitivity, career selection, regulatory and statutory processes, and economic practices.

Conceptual Matrix for Integrated Waste Management

<div>CONTENT</div> <div>PROCESS</div>	NATURAL ENVIRONMENT Natural Systems and Interactions	BUILT ENVIRONMENT Human Alterations to Natural Systems	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions
FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT	Individuals recognize that all organisms create waste through the use of natural resources and that waste is cycled through natural systems.	Individuals are aware that human actions alter natural systems through the extraction and processing of natural resources. They recognize the need for sustainable management practices and the potential disruption to natural systems caused by the irresponsible management of waste products.	Responsible individuals recognize that they are an integral part of both natural and built environments and that their attitudes and actions regarding resource use and waste generation have an impact on these environments.
UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS	Individuals understand that waste is a by-product of life and that natural systems have a limited capacity to process and reuse waste.	Individuals understand that the volume of waste created by humans tends to increase as natural resource consumption and human populations rise. They understand that waste can be reduced, recycled, and disposed through a variety of waste management methods and technologies with both positive and negative effects on the environment.	Individuals understand that through their expectations, consumer choices, and behavior, they have the ability to decrease the use of resources and generation of waste. They understand that reducing waste, reusing materials, recycling, and composting contribute to the sustainable use of natural resources.
TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT	In order to conserve natural resources individuals and organizations accept responsibility and take knowledgeable and appropriate action to reduce the consumption of both renewable and non-renewable resources and the production of waste.	Using their knowledge, skills, and ethics, humans design systems for managing and reducing the use of natural resources and the generation of waste in order to achieve a sustainable society.	Using their knowledge, skills, and ethics, responsible individuals analyze and debate the long-term effects, costs, and benefits of their lifestyle choices. They take responsible action by consuming less resources, practicing waste reduction, and applying waste management strategies in their homes, schools, and communities.

Conceptual Matrix for Used Oil

<div>CONTENT</div> <div>PROCESS</div>	NATURAL ENVIRONMENT Natural Systems and Interactions	BUILT ENVIRONMENT Human Alterations to Natural Systems	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions
FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT	Individuals are aware that natural systems form materials over time and that some are renewable and some non-renewable, such as fossil fuels.	Individuals recognize the tradeoffs of using renewable and non-renewable resources to maintain and improve their existence. They are aware of the dependence of human communities upon petroleum products such as motor oil and the effect of extraction, processing, and use of these products on natural systems.	Individuals are aware of their responsibility to conserve and recycle petroleum products, such as motor oil. They recognize that recycling and using recycled motor oil is energy-efficient, economically sound, and environmentally beneficial.
UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS	Individuals understand how petroleum and other fossil fuels are formed and why they are a finite, natural resource. They understand the basic physical and chemical properties of oil and how it interacts with the environment.	Individuals understand that when petroleum is processed into motor oil, it can be produced, utilized, and recovered in a manner that conserves limited petroleum supplies and reduces possible contamination of groundwater, surface water, soil, and air.	Individuals understand their responsibility to properly store and return used oil for recycling. They know that using recycled oil products helps support the sustainable use of energy resources.
TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT	In order to protect the health of the environment, individuals and organizations encourage, monitor, and practice the recycling and reuse of motor oil. In so doing, they reduce the possibility of oil contamination of groundwater, surface water, soil, and air.	Through personal, community, and government action, responsible individuals properly store and return used oil for recycling. They develop sustainable methods for achieving the responsible management of used motor oil to conserve the quality of natural and built environments.	Using their knowledge, skills, and ethics, informed citizens conserve, recycle, and reuse motor oil resources. They take responsible action based on the analysis of benefits, costs, regulatory and statutory requirements, and long-term effects upon the natural and built environment.

Conceptual Matrix Framework Correlations

<div>CONTENT</div> <div>PROCESS</div>	NATURAL ENVIRONMENT Natural Systems and Interactions	BUILT ENVIRONMENT Human Alterations to Natural Systems	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions
FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT	Science: energy; patterns of change; scale and structure; stability; and systems and interactions. History/Social Science: basic study skills and geographic literacy. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking and mathematical ideas. Visual and Performing Arts: aesthetic valuing. Health: environmental health.	Science: energy; patterns of change; and systems and interactions. History/Social Science: basic study skills; critical thinking skills; and geographic literacy. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking and mathematical ideas. Visual and Performing Arts: aesthetic valuing. Health: environmental health.	Science: energy, and systems and interactions. History/Social Science: basic study skills; critical thinking skills; and economic and ethical literacy. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking and mathematical ideas. Visual and Performing Arts: aesthetic valuing. Health: environmental health; and consumer and community health. Physical Education: self-image and personal development.
UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS	Science: energy; evolution; patterns of change; scale and structure; and systems and interactions. History/Social Science: basic study skills and geographic literacy. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking; mathematical ideas; and mathematical tools and techniques. Visual and Performing Arts: aesthetic valuing. Health: environmental health.	Science: energy; patterns of change; and systems and interactions. History/Social Science: geographic literacy and critical thinking skills. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking; mathematical ideas; and mathematical tools and techniques. Visual and Performing Arts: aesthetic valuing. Health: environmental health.	Science: energy, and systems and interactions. History/Social Science: critical thinking skills; economic literacy; and ethical literacy. English/Language Arts: oral language skills; composition skills; and the art of questioning. Mathematics: thinking; mathematical ideas; and mathematical tools and techniques. Visual and Performing Arts: aesthetic valuing. Health: environmental health; and consumer and community health. Physical Education: self-image and personal development.
TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT	Science: energy; patterns of change; scale, structure. History/Social Science: critical thinking and participation skills; sociopolitical literacy; and civic values, rights, and responsibilities. English/Language Arts: oral language skills; composition skills; art of questioning; conventions of language. Mathematics: thinking; mathematical ideas; mathematical tools and techniques; and communication. Visual and Performing Arts: creative expression and aesthetic valuing. Health: environmental health; and consumer and community health. Physical Education: social development.	Science: energy, and systems and interactions. History/Social Science: critical thinking and participation skills; sociopolitical literacy; and civic values, rights, and responsibilities. English/Language Arts: oral language skills; composition skills; art of questioning; conventions of language. Mathematics: thinking; mathematical ideas; mathematical tools and techniques; and communication. Visual and Performing Arts: creative expression and aesthetic valuing. Health: environmental health; and consumer and community health. Physical Education: social development.	Science: energy, and systems and interactions. History/Social Science: critical thinking and participation skills; economic, ethical, geographic, socio-political literacy; civic values, rights, and responsibilities. English/Language Arts: oral language skills; composition skills; art of questioning; conventions of language. Mathematics: thinking; mathematical ideas; mathematical tools and techniques; and communication. Visual and Performing Arts: creative expression and aesthetic valuing. Health: environmental health; and consumer and community health. Physical Education: social development; and self-image and personal development.

Conceptual Matrix Content Standards Correlations

<div>CONTENT</div> <div>PROCESS</div>	NATURAL ENVIRONMENT Natural Systems and Interactions	BUILT ENVIRONMENT Human Alterations to Natural Systems	PERSONAL ENVIRONMENT Citizens' Roles, Responsibilities, Choices, and Actions
FOSTERING AWARENESS AND APPRECIATION OF THE ENVIRONMENT	Science: life and physical sciences. History/Social Science: history and geography. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; listening and speaking strategies; and oral and written English language conventions. Mathematics: number sense. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8702 and 8706.	Science: life, earth, and physical sciences. History/Social Science: history; geography; chronological and spatial thinking; and historical interpretation. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; listening and speaking strategies; and oral and written English language conventions. Mathematics: number sense; and measurement and geometry. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8701, 8702, 8704, and 8706.	Science: earth and physical sciences. History/Social Science: civics; economics; and research, evidence, and point of view. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; listening and speaking strategies; and oral and written English language conventions. Mathematics: measurement and geometry; statistics, data analysis and probability; and mathematical reasoning. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8702, 8704, and 8705.
UNDERSTANDING BASIC ENVIRONMENTAL CONCEPTS	Science: life, earth, and physical sciences; and investigation and experimentation. History/Social Science: history and geography. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; literary response and analysis; writing, listening, and speaking strategies; and oral and written English language conventions. Mathematics: number sense. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8702, 8705, and 8706.	Science: life, earth, and physical sciences; and investigation and experimentation. History/Social Science: history; geography; economics; chronological and spatial thinking; and historical interpretation. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; and oral and written English language conventions. Mathematics: number sense; algebra and function; measurement and geometry; statistics, data analysis and probability; and mathematical reasoning. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8701, 8702, 8704, 8705, and 8706.	Science: life, earth, and physical sciences; and investigation and experimentation. History/Social Science: civics; economics; and research, evidence, and point of view. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; listening and speaking strategies; and oral and written English language conventions. Mathematics: algebra and function; measurement and geometry; statistics, data analysis and probability; and mathematical reasoning. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8702, 8704, 8705, and 8706.
TAKING RESPONSIBLE ACTIONS TOWARD THE ENVIRONMENT	Science: life and earth sciences; and investigation and experimentation. History/Social Science: history; geography; civics; economics; research, evidence and point of view; and historical interpretation. English/Language Arts: word analysis and vocabulary development; reading comprehension; literary response and analysis; writing, listening, and speaking strategies; and writing and speaking applications. Mathematics: number sense. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8702 and 8706.	Science: life and earth sciences; and investigation and experimentation. History/Social Science: history; geography; civics; economics; chronological, spatial thinking; research, evidence and point of view; historical interpretation. English/Language Arts: word analysis and vocabulary development; reading comprehension; literary response and analysis; writing, listening, and speaking strategies; and writing and speaking applications. Mathematics: algebra and function; measurement and geometry; statistics, data analysis and probability; and mathematical reasoning. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8701, 8702, 8704, 8705.	Science: life and earth sciences; investigation and experimentation. History/Social Science: civics; economics; research, evidence and point of view; and historical interpretation. English/Language Arts: word analysis and systematic vocabulary development; reading comprehension; literary response and analysis; writing, listening, and speaking strategies; and writing and speaking applications. Mathematics: algebra and function; measurement and geometry; statistics, data analysis and probability; and mathematical reasoning. Education Code: Chapter 4 Environmental Education, Article 2, Sections 8704 and 8705.

Integrated Waste Management and Used Oil Evaluation Tool

The following environmental education evaluation instrument was used by the project's reviewers to evaluate the curricula. This instrument reflects the recommendations and perspectives of the following documents:

"1992 Science Instructional Materials Evaluation Form," California Department of Education, 1992.

Andrews, Bill, "Background Paper I: Environmental Education Strategy of the California Department of Education," California Department of Education.

Energy Education Evaluation Form - the evaluation tool used for the Water Resources and Energy Resources compendia published in 1992.

Gardella, Ron, Environmental Education Curriculum Inventory (Forms A and B), Northern Kentucky University, Highland Heights, KY, 1992.

Health Framework for California Public Schools (pp.184-195), California Department of Education, 1994.

History-Social Science Framework for California Public Schools (pp. 114-120), California Department of Education, 1988.

Niedermeyer, Fred, "A Checklist for Reviewing Environmental Education Programs" (pp. 46-50), *Journal of Environmental Education*, Vol. 23, 1992.

Olson, Betsy, "Environmental Education Instructional Materials Evaluation Form," California Department of Education (draft).

Science Framework for California Public Schools (Chapter 8, pp. 198-213), California Department of Education, 1990.

Science Resource Center, "Rating System for ME-2," Los Angeles Unified School District.

"The Superintendent's Point of View on Environmental Education," California Department of Education, 1990.

UNESCO, "The Belgrade Charter," UNESCO-UNEP Environmental Education Newsletter, Volume I, Number 1, January 1976.

UNESCO, "The Tbilisi Declaration," October 1977.

I. Criteria For Instructional Materials

A. General Content

1. Are ideas expressed through unifying themes and big ideas, not facts?
2. Is content interdisciplinary?
3. Are students challenged to utilize age-appropriate higher level thinking processes?
4. Are ideas presented logically and connected through the curriculum?
5. Is depth of understanding emphasized (rather than encyclopedic breadth)?
6. Are historical, ethical, cultural, geographic, economic, and sociopolitical relationships addressed?
7. Is the learning process and the acquisition of knowledge shown as connected to the students' lives and society?

B. Presentation

1. Are instructional materials clearly and engagingly written with the main concepts well articulated?

Integrated Waste Management and Used Oil Evaluation Tool

2. Are the roles of environmental ethics, citizenship, and stewardship explored?
3. Do lessons promote respect and caring for the environment, yet are nondogmatic and open to inquiry and differences of opinion?
4. Are personal and societal values and conflicting points of view explored in context?
5. Are instructional materials easy for students to use and understand?
6. Is learning made accessible to limited English proficiency students?
7. Are writings and concepts developmentally appropriate for the designated grade, yet sensitive to individual differences in educational experience and learning mode?
8. Is environmental responsibility modeled in design, underlying philosophy, and suggested activities by the lessons and materials (e.g., using recycled materials, creating minimal amounts of waste, and properly disposing of the waste)?
9. Are there clear linkages between communities of all levels (“thinking globally, acting locally”)?
10. Are vocabulary words defined in context and not dominating of learning goals?
11. Is the layout of instructional materials interesting and appealing?

C. Pedagogy

1. Does almost half of the curriculum have students engaged in active learning?
2. Is learning based on the students constructing knowledge

through research, discussion, and application to gain conceptual understanding?

3. Are evaluation devices included, appropriate, and aligned with the objectives of outcomes presented? (Highest points for authentic, performance-based assessment devices.)
4. Are instructional materials sensitive to social, economic, and cultural diversity?
5. Do lessons encourage students to develop awareness, knowledge, and strategies for responsible action?
6. Are group/cooperative learning strategies used?
7. Is intergenerational responsibility, linking today’s actions with future consequences, implicit in instructional methods?

D. Teacher Usability

1. Are instructions for the teacher clear and concise?
2. Are lesson objectives/outcomes clear and appropriate?
3. Are materials easily integrated into an established curriculum?
4. Is background information for the teacher adequate and accurate?
5. Can the materials be adapted to varied learning environments (large/small classes, of mixed levels, from rural/urban settings)?
6. Are consumable instructional materials of good quality, easily duplicated for student use, and in sufficient quantity to support the objectives?

Integrated Waste Management and Used Oil Evaluation Tool

7. Are equipment/materials listed and reasonably accessible?
8. Do the materials suggest a variety of instructional strategies, expanded learning environments, and resources in the curriculum's design?
9. Is the time required to complete each lesson indicated?
10. Do the materials clearly list the subject discipline(s) integrated into each lesson?

E. Integrated Waste Management Content Questions

Do the materials provide opportunities for students to:

1. acknowledge their personal consumption of natural resources and generation of waste?
2. recognize that their attitudes and actions regarding resource use and waste generation have an impact on both the natural and built environment?
3. appreciate their role as a consumer, empowered to make choices that reduce resource consumption and waste generation?
4. understand that waste is a by-product of life and that natural systems have a limited capacity to process and reuse waste?
5. identify strategies to reduce, reuse, recycle, and compost waste in order to conserve natural resources and decrease waste in landfills?
6. describe all steps in the recycling process, including sorting, collecting, re-manufacturing, and purchasing of recycled products?
7. understand the potential environmental impacts of landfills (groundwater contamination, gas accumulation, closure, etc.) and incineration?

8. acquire personal problem-solving and decision-making skills related to waste reduction, recycling, and disposal, including evaluating the positive and negative consequences of decisions?
9. apply problem-solving and decision-making skills to analyze the long-term effects, costs, and benefits of lifestyle choices in the consumption of resources and generation of waste?
10. practice waste reduction and waste management strategies at home, school, and the community?

F. Used Oil Content Questions

Do the materials provide opportunities for students to:

1. acknowledge their consumption of petroleum products such as motor oil and potential generation of hazardous waste?
2. appreciate the finite, non-renewable nature of petroleum products?
3. recognize that their attitudes and actions regarding the handling, use, and reuse of petroleum products such as motor oil have an impact on both the natural and built environment?
4. appreciate their role as a consumer, empowered to make choices that reduce resource consumption and hazardous waste generation, such as the purchase of recycled products?
5. understand the basic physical and chemical properties of petroleum oil and the interactions of oil with the environment?
6. understand that motor oil can be recycled, re-refined or reprocessed, and reused?
7. know the proper way to store and return used oil for recycling and understand the negative consequences of improper disposal?

Integrated Waste Management and Used Oil Evaluation Tool

8. describe the effects of improper disposal of used motor oil on groundwater, surface water, soil, and air?

9. acquire and apply personal problem-solving and decision-making skills related to recycling and reusing used motor oil?

10. apply problem-solving and decision-making skills to analyze the long-term environmental and economical costs and benefits of automotive care choices, particularly the use, recycling, and reuse of motor oil?

II. Narrative/Miscellaneous

In thinking back on the materials you've just evaluated:

A. Briefly comment on the strengths of the materials.

B. Briefly comment on the weaknesses of the materials.

C. Put a checkmark next to the specific integrated waste management issues that the materials address:

- | | |
|---|--|
| <input type="checkbox"/> source reduction | <input type="checkbox"/> litter prevention |
| <input type="checkbox"/> waste reduction | <input type="checkbox"/> natural resource conservation |
| <input type="checkbox"/> reduce, reuse, recycle | <input type="checkbox"/> consumerism and economics |
| <input type="checkbox"/> composting | <input type="checkbox"/> environmental impact of |
| <input type="checkbox"/> vermicomposting | <input type="checkbox"/> landfills and incineration |

Put a checkmark next to the specific used oil issues that the materials address:

- | | |
|--|--|
| <input type="checkbox"/> recycling of used motor oil | <input type="checkbox"/> use of recycled motor oil |
| <input type="checkbox"/> oil as non-renewable resource | <input type="checkbox"/> environmental impact of improper disposal |

D. Using a percent, estimate how much of the materials are specific to IWM: ____ % used oil: ____ %

E. Other comments

F. Would you use the materials in your class? (Circle one.)

- Absolutely
Probably
Maybe
Not likely
No chance

G. Besides English, in what other languages are the materials available? If not entirely translated, what parts are?

H. Do the materials contain a listing of resources, such as in an appendix or teacher resource guide?

I. Is there evidence that the curriculum was field tested? Briefly describe the process.

J. Place a checkmark in the appropriate box across from each discipline to indicate the amount of emphasis each is given in the curriculum.

	None	Some	A Lot	Major
Science				
History/social science				
Health				
Mathematics				
Visual/performing arts				
Language arts				
Industrial tech./voc. ed.				
Foreign language				

Supplemental Materials

Although the following materials did not qualify as formal curricula, each may serve as a useful supplemental resource.

A District-wide Approach to Recycling: A Guide for School Districts, California Integrated Waste Management Board, 8800 Cal Center Drive, Sacramento, CA 95826 (916) 255-2385. Comprehensive guide to establishing school district recycling programs.

Alameda County Recycling Guide, Alameda County Waste Management Authority & Source Reduction and Recycling Board, 777 Davis Street, Suite 200, San Leandro, CA 94577 (510) 639-2498. Thirty-six page guide to understanding recycling, the handling of household hazardous waste, automotive products, and other products, the exchange of material and reduction of unwanted mail, and recycling services available in Alameda County.

Aluminum Beverage Cans, The ABCs of Environmental Education, Can Manufacturers Institute, 1625 Massachusetts Avenue, NW, Washington, DC 20036 (888) 226-2368. Folder of materials including an intermediate level curriculum, chart and brochure on the National Fourth Grade Recycling Competition, "The Great Aluminum Can RoundUp." Seven lesson plans use the aluminum beverage can as a case study in environmental education.

Bottle Biology, Kendall Hunt Publishing Company, 4050 Westmark Drive, P.O. Box 1840, Dubuque, IA 52004 (800) 228-0810. Twenty different activities involving the reuse of two-liter plastic beverage containers are thoroughly described in this 127 page book. Bottle Biology includes detailed instructions on preparing the bottle, as well as background information, student worksheets, and references.

Classroom Activities, Maine State Planning Office, Waste Management and Recycling Program, State House Station 38, Augusta, ME 04333 (207) 287-8050. This compilation of activities from other curricula focuses on waste management, consumer behavior, and recycling. Multidisciplinary approaches include the use of skits, poems, simulation studies, and role-playing.

Collecting and Recycling Used Motor Oil, American Petroleum Institute, 1220 L Street, NW, Washington, DC 20005 (202) 682-8118. Brochure provides a brief overview of the recycling of used motor oil and steps to take when collecting used motor oil.

Community Activity Sheets, Steel Recycling Institute, Foster Plaza, Number 10, 680 Andersen Drive, Pittsburgh, PA 15220 (800) 876-7274. Two-sided masters allow students to be led through activities and games that focus on the recycling of all types of materials including steel.

Compost Gin Card Game, Tall Oak Productions, 3517 Virginia, Kansas City, MO 64109 (888) 484-4477. Set of cards for four players teaches composting concepts and math skills as players gain or lose points attempting to make compost.

Composting Across the Curriculum, Marin County Office of Waste Management, 3501 Civic Center Drive, Room 403, San Rafael, CA 94903 (415) 499-6647. This teacher's guide to composting applies science, history, math, and communication skills as students discover how to undertake a backyard composting or vermicomposting project. Numerous activities connect composting to the curriculum, as students explore soil and decomposition and learn about solid waste.

Composting in the Classroom, Kendall/Hunt Publishing Company, 4050 Westmark Drive, P.O. Box 1840, Dubuque, IA 52004-1840 (800) 228-0810. Designed for teachers interested in guiding composting research projects undertaken by high school students. Contents provide an overview of the science of composting, instructions for building compost systems, and specific information regarding scientific techniques for monitoring the composting process and testing the properties of finished compost.

Composting Matters, Environmental Hazards Management Institute, 10 Newmarket Road, Durham, NH 03824 (603) 868-1496. Twelve page coloring and activity book.

Supplemental Materials

Composting to Reduce the Waste Stream, Cornell Cooperative Extension, Resource Center, 7 Business & Technology Park, Cornell University, Ithaca, NY 14850 (607) 255-2080.

Composting: Waste to Resources, Cornell Cooperative Extension, Resource Center, 7 Business & Technology Park, Cornell University, Ithaca, NY 14850 (607) 255-2080. This folder of materials is designed for 4-H leaders, camp counselors, and teachers interested in establishing composting projects with youth. Thirty-six page teacher's guide is accompanied by a compost project record and plans for eleven different composting systems.

California Conservation Corps (CCC) Used Oil Recycling Education Program, California Conservation Corps, 1719 24th Street, Saramento, CA 95816 (916) 341-3152. School presentations on used oil recycling are available throughout the state for high school classes in driver's education, science, and auto shop.

Creative Reuse Extravaganza, The East Bay Depot for Creative Reuse, Inc., 6713 San Pablo Avenue, Oakland, CA 94608 (510) 547-6470. Creative Reuse Extravaganza: A Festival of Games, Crafts, and Fun using Discarded Materials is a guide on how to host such an extravaganza whose goal is to divert material away from the waste stream and reuse it creatively. Recommendations on how to organize the event, obtain the discarded materials, establish the stations, and conduct the activities are offered.

Do It Right recycling used oil brochure, City of Fremont, Environmental Services Division, 39550 Liberty Street, PO Box 5006, Fremont, CAA 94537-5006 (415) 494-4740. Succinct brochure answers numerous questions about the importance of and procedure for recycling used motor oil.

Do the Rot Thing, a Teacher's Guide, Alameda County Waste Management Authority and Source Reduction and Recycling Board, 777 Davis Street, Suite 200, San Leandro, CA 94577 (510) 614-699. Com-

posting and vermicomposting activities are provided for grades K-12, beginning with introductory explorations (i.e. "What is Biodegradable?"), basic principles of composting and vermicomposting, and concluding with student action projects to spread the word about composting, and poetry and song selections. Resource list and appendices are also featured.

Don't Let a Good Thing Go To Waste, Plastic Bag Information Clearinghouse, 1817 East Carson Street, Pittsburgh, PA 15203 (800) 438-5856. Supplementary lessons for grades 2-5 explore the concept of trash and landfills, as well as strategies to reduce waste. Worksheets, spelling lists, quiz, reprints of articles, and plastic bag for use in the activities are provided.

Drink Box Recycling materials (brochure, posters), Aseptic Packaging Council, 2111 Wilson Boulevard, Suite 700, Arlington, VA 22201 (703) 351-5062. How-to guide to the collection and recycling of aseptic drink boxes is accompanied by one poster that illustrates the process of recycling drink boxes and another that interprets the benefits of using and recycling aseptic packages.

Earth Cycles, Steel Recycling Institute, Foster Plaza, Number 10, 680 Andersen Drive, Pittsburgh, PA 15220 (800) 876-7274. The Earth Cycles Activity Guide is designed for use by teachers of grades 3-5 or youth advisors and student leaders in grades 9-12. Solid waste management is explored through such activities as designing a space food eating system to minimize waste, dismantling a non-working toaster to identify non-metal and metal parts for scrap, and playing a multi-material recycling game.

Easy Green, A Handbook of Earth-Smart Activities and Operating Procedures for Youth Programs, American Camping Association, 5000 State Road 67 North, Martinsville, IN 46151-7902 (800) 428-2267. Defines operating procedures for establishing precycling, recycling, water and energy conservation programs, composting, and managing hazardous materials for camp and recreation programs.

Supplemental Materials

Eco-Inquiry, Kendall / Hunt Publishing Company, 4050 Westmark Drive, P.O. Box 1840, Dubuque, IA 52004 (800) 228-0810. Designed for upper elementary and middle grade, one of the modules in this guide to ecological learning experiences focuses extensively on decomposition and soil dynamics. Cooperative learning and authentic assessment are emphasized throughout all activities.

Environmental Connections Resource Guide, Central Contra Costa Solid Waste Authority, 1280 Civic Drive, Suite 314, Walnut Creek, CA 94596 (925) 906-1801. Available for Contra Costa teachers, fifty-nine page curriculum guide explores solid and household hazardous waste, offers information on local service providers, and offers classroom lesson plans.

Environmental Teaching Guides: Lesson Plans on Air Quality, Water Quality, Recycling and Waste Management for Grades K-6, Volumes I and II, Texas Natural Resource Conservation Commission, MC-113, PO Box 13087, Austin, TX 78711 (512) 239-0012. Compilation of lesson plans on four environmental topics, including recycling and waste management.

EnviroScape Landfill Model, EnviroScape Models, JT & A, Inc., 14524-F Lee Road, Chantilly, VA 20151 (703) 631-8810. Three-dimensional landfill model demonstrates the working of a modern landfill system, including leachate accumulation, collection and management in a landfill cell, use of detection and collection systems, and closure of a completed landfill cell. Model comes with all necessary supplies and user's guide.

Garbology: Activities for Students K through 12, Office of Environmental Education, Florida Gulfcoast University, 1311 Paul Russell Road, Suite 210A, Tallahassee, FL 32301 (850) 487-7900. Defined as a strategy for practicing reuse and recycling, "garbology" utilizes plastic beverage bottles, plastic containers, egg cartons, and other ordinary materials to create growing environments, mini-landfills, Cartesian diver demonstrations, and container gardens.

Grime Fighters Activity Poster, Plastic Bag Information Clearinghouse, P.O. Box 2811, Pittsburgh, PA 15230 (800) 438-5856. Five litter prevention activities are described on this colorful poster accompanied by a master "Grime Fighter" student handout.

Hands On Plastics: A Scientific Investigation Kit, American Plastics Council, 1801 K Street, Suite 701-L, Washington, DC 20006 (800) 243-5790. Designed for middle school students, this kit contains a teacher guide with background information and lesson plans on the history, coding, chemical structure, and recycling or incineration of plastics and polymers; samples of recycled plastic resins; and labeled plastic items packaged in a carrying case. Video, "The Busy, Busy Planet," is also available.

Healthy Environment – Healthy Me, Resource Center of Environmental and Occupational Health Sciences Institute, Public Education and Risk Communication Division, 681 Frelinghuysen Road, P.O. Box 1179, Piscataway, NJ 08855 (908) 932-0110. Interdisciplinary environmental and occupational health curriculum offers grade-specific lesson plans. The kindergarten unit enables students to understand the concept of environment, the first grade unit explores recycling; the second grade unit explores the meanings of health and safety, the third grade further explores health and safety issues, the fourth grade unit explores water pollution, the fifth grade unit explores air pollution, and the sixth grade unit explores solid waste management.

Kansas Don't Spoil It Activity Book and Lessons in Solid Waste Management K-3, Kansas Department of Health and Environment, Division of Environment, Bureau of Waste Management, Forbes Field, Building 740, Topeka, KS 66620 (785) 296-1600. A thirty-one page "Don't Spoil It Activity Book developed in conjunction with the state of Kansas' "Don't Spoil It!" Week, and lesson packets for grades K-3 and 4-8 focus on solid waste management issues.

Less Waste in the First Place, Flexible Packaging Educational Foundation, 1090 Vermont Avenue, N.W., Suite 500, Washington, DC 20005

Supplemental Materials

(202) 842-3880. Booklet of six lesson plans is accompanied by videotape and Source Reduction poster. Lessons focus on packaging and source reduction using modern package design as the context. Video, "Less Waste in the First Place," is also available.

Let's Recycle Coloring Book, and curriculum packages for grades K-3 and 4-6. City of Orange, Department of Public Works, Recycling Office, P.O. Box 449, 300 East Chapman Avenue, Orange, CA 92666 (714) 744-2208. Bilingual nineteen page coloring book is accompanied by a packet of lesson plans for grades K-3. Packet of lesson plans and student handouts are also available for grades 4-6.

Let's Recycle Together, Steel Recycling Institute, 680 Andersen Drive, Pittsburgh, PA 15220 (800) 876-7274. Steel can finger puppet ROSCOE (Recycle Our Steel; Conserve Our Environment) is accompanied by a songs, script, and set of posters depicting scenes from a recycling play for students ages 4-7.

Little Shop of Horrors teacher's manual and student manual, City of Anaheim Fire Department, 201 South Anaheim Boulevard, Suite 300, Anaheim, CA 92805 (714) 765-4154 (levels 9-12). Designed for high school automotive shop classes, these manuals provide a range of activities and information regarding oil, including environmental, healthy, and safety issues, laws and regulations, the handling and recycling of used oil, and applicable careers.

NEED Museum of Solid Waste and Energy, National Energy Education Development (NEED) Project Headquarters, 102 Elden Street, Suite 15, Herndon, VA 20170 (703) 471-6263. For grades 4-12, this manual offers guidelines for the creation of eight museum-style exhibits and station guides based on solid waste and energy topics, including the recycling of various products, landfilling, and burning of waste.

Packaging and the Environment, Real-World Mathematics through Science, Addison-Wesley Longman, 1 Jacob Way, Reading, MA 01867 (800) 872-1100. One is a series of middle school level modules, *Pack-*

aging and the Environment challenges students to apply mathematical and scientific skills much in the manner as a packaging engineer in the redesign of a cereal box to reduce potential waste.

Popsi: Secrets of the Dump Environmental Education Program, Post-Consumer Products, 2725 West Coast Highway, Newport Beach, CA 92663 (949) 646-0229. The Popsi Project consists of a binder of background information and K-3 lessons, the "Popsi" doll manufactured out of fabric made from recycled PETE plastic, classroom set of student booklets, samples of plastic pellets and fiber, song cassette, and packet of sunflower seeds. The project is designed to illustrate the complete recycling process: reducing, reusing, recycling, and remanufacturing products from recycled material.

Project Create, The East Bay Depot for Creative Reuse, Inc. 6713 San Pablo Avenue, Oakland, CA 94608 (510) 547-4733. Compiled in a binder, *Project Create* activities encourage students to apply their artistic talents in the creation of art using discarded materials diverted from a landfill. Introductory activities apply math and science in the analysis of garbage; follow-up activities include the construction of kaleidoscopes, masks, photo-slide pins, shadow puppets, and tin-can recycled paper.

Project Seasons, Shelburne Farms, Shelburne, VT 05482 (802) 985-8686. Included in this collection of interdisciplinary activities for elementary students is an entire chapter on soil, decomposition, and worms, including creative observations, exhibits ("Goldilocks and the Three Beans"), and worksheet masters.

Recycling 35 mm Canisters for the Teaching of Science, Creative Ventures, Inc., P.O. Box 2286, West Lafayette, IN 47906. Hands-on activities and experimental investigations are presented reusing 35 mm film canisters. Projects primarily involve the physical sciences and include such activities as creating pulleys, siphons, and pendulums, and studying static electricity, density, and buoyancy.

Supplemental Materials

Recycling How -To Kit, Tree Musketeers, 136 Main Street, Suite A, El Segundo, CA 90245 (310) 322-0263. Folder of recycling brochures, literature, and “Kid Power How -To Kit for Young Activists” activity guide detailing steps to organize a community event or environmental project.

Recycling in America, Waste Policy Center, 211 Loudon Street, SW, Leesburg, VA 22075 (703) 777-9800. Report summarizes the current (1996) status of recycling in the United States and describes national trends in recycling operations and the recycling of key materials.

Recycling Slide Show, Recycle America, Waste Management, Inc., 3003 Butterfield Road, Oak Brook, IL 60521. Extensive slide presentation (176 slides) introduces topics of recyclable materials, landfills, collection, policy, and education.

Recycling Two-Liter Bottles, Creative Ventures, Inc., P.O. Box 2286, West Lafayette, IN 47906. Hands-on activities and experimental investigations are presented reusing two-liter plastic beverage containers. Projects focus on both the biological and physical sciences, including the construction of terraria, water clock, pendulum, and flash-light. Detailed instructions and background information are provided.

Recycling With Earthworms, Resource Conservation District, 332 South Juniper Street, Suite 110, Escondido, CA 92025 (760) 745-2061. This earthworm manual (100 p.) offers information on soil science, worm biology, construction and maintenance of worm bins is accompanied by a 30-minute video, “The Red Wiggler Connection.”

Recycling: Mining Resources from Trash, Cornell Cooperative Extension, Resource Center, 7 Business & Technology Park, Cornell University, Ithaca, NY 14850 (607) 255-2080. Folder consisting of five posters and a thirty-three page booklet provides an overview of waste disposal, the recycling of paper, glass, metal, plastic, organic waste, and motor oil, and eleven classroom activities.

Reduce, Reuse, Recycle School Activity Guide, County of Santa Cruz and Ecology Action, Inc., PO Box 1188, 125 Water Street, Santa Cruz, CA 95061 (831) 426-5925. Compilation of lesson plans, mazes and word searches, fact sheets, and additional resources including classroom presentations and composting projects.

San Francisco Recycling Guide, San Francisco Recycling program, 1145 Market Street, Suite 401, San Francisco, CA 94103 (415) 554-6193. Multilingual brochure describes strategies to reduce, reuse, and recycle in San Francisco.

School Recycling Programs, A Handbook for Educators, US Environmental Protection Agency, National Center for Environmental Publications and Information, PO Box 42419, Cincinnati, OH 45242 (800) 424-9346. Twenty-four page booklet describes options for school recycling programs, along with step-by-step instructions on how to establish one.

Seeing Green Through Waste Prevention, A Guide for School Districts, California Integrated Waste Management Board, 8800 Cal Center Drive, Sacramento, CA 95826 (916) 255-2385. A how-to guide illustrating waste prevention practices that school districts have found effective in reducing waste and cutting costs.

Setting Up a Solid Waste Recycling Program in Schools, Waste Policy Center, 211 Loudon Street, SW, Leesburg, VA 20175 (703) 777-9800. Sixty-one page manual offers detailed guidelines for establishing a recycling program on campus, including identifying markets for recyclables, selecting a recycling coordinator, and launching the campaign through educational activities.

Supplementary Curriculum on Used Motor Oil, City of Modesto Engineering and Transportation Department, PO Box 642, Modesto, CA 95353 (209) 577-5453. Designed for grades 4-12, this used oil cur-

Supplemental Materials

riculum provides extensive background specific to Modesto and activities that explore the characteristics of oil and consequences of oil disposal. Lessons make use of groundwater models and local Modesto resources.

Teachers Guide to the Four R's, Alameda County Recycling Guide, Alameda County Waste Management Authority & Source Reduction and Recycling Board, Schools Education program, 777 Davis Street, Suite 200, San Leandro, CA 94577 (510) 614-1699. Classroom lessons for grades K-12 introducing the concept of 4 R's (reduce, reuse, recycle, and rot). Other resources available to Alameda County teachers include a compost poster, fourteen minute video, "Kids Talkin' Trash," compost bins and worm boxes, field trips, resource library, and "Do the Rot Thing" Teachers Guide, described herein.

Texas School Recycling Guide, Texas Natural Resource Conservation Commission, MC-113, PO Box 13087, Austin, TX 78711 (512) 239-0012. Booklet outlines the procedures for setting up and maintaining a school recycling program. Brochure entitled "Eight Tips to Involve Elementary Students in School Recycling" is also available.

The Adventures of Garbage Gremlin, US Environmental Protection Agency, Office of Solid Waste, 401 M Street, SW, Washington, DC 20460. Sixteen page comic-style booklet is designed to accompany the "Let's Reduce and Recycle" Curriculum and "School Recycling Programs: A Handbook for Educators" publications.

The Family Ecology Guide, a Program for Encouraging Sustainable Lifestyles, Alameda County Office of Education, Media Sales, 313 West Winton Avenue, Hayward, CA 94544 (510) 887-0152. Focusing on the solid waste dilemma, the Family Ecology Guide provides background information and home- and community-based activities involving parents and children working together to reduce waste. Detailed guidance is offered on the establishment of a Family Ecology Program, training sessions, and School Ecology Week. Spanish translations of take-home sheets are also provided.

The Solid Waste Mess: What Should We Do With the Garbage? (EIF), Kendall Hunt Publishing Company, 4050 Westmark Drive, P.O. Box 1840, Dubuque, IA 52004 (800) 228-0810. This set of booklets are designed for public and school discussions regarding the often controversial issue of solid waste management. The issue is presented from three perspectives, each viewing the issue and the solution differently.

The Worm Cafe: Mid-Scale Vermicomposting of Lunchroom Wastes, Flower Press, 10332 Shaver Road, Kalamazoo, MI 49024 (616) 327-0108. This recently released book serves as a manual for schools, small businesses, and community groups interested in establishing and maintaining a worm bin to manage food waste and implement a successful project-based learning program.

Trash Facts IV, Recycling in America, Environmental and Public Health Aspects of Reusable and Disposable Foodservice Packaging, Waste Policy Center, 211 Loudon Street, SW, Leesburg, VA 20175 (703) 777-9800. Reference sheet of recent data on the management of trash (landfilling, combustion, and recycling), state recycling goals, and percentage breakdown of municipal solid waste contents.

Waste Management Resources for Solano Co. Teachers, Solano Co. Department of Environmental Management, 601 Texas Street, Fairfield, CA 94533 (707) 421-6765. This booklet is designed to help Solano County teachers locate resources; arrange for field trips, in-service training, and in-class speakers; and utilize reuse centers.

Waste Wise: Concepts in Waste Management: A Resource Guide for Teachers Using Concepts of Critical Thinking and Decision Making, Information Clearinghouse, Aseptic Packaging Council, P.O. Box 3794, Washington, DC 20007 (800) 277-8088. Student handouts and supplementary lessons appropriate for multiple grade levels examine waste volume, options for handling waste, decisions on packaging, life cycle of product packaging, and the use of aseptic package.

Supplemental Materials

What about Waste? Cornell Cooperative Extension, Resource Center, 7 Business & Technology Park, Cornell University, Ithaca, NY 14850 (607) 255-2080. Booklet for 4-H leaders, teachers, parents, and camp counselors designed to teach students about waste and waste reduction through five activities. List of vocabulary, additional resources, and project evaluation are also provided.

Wonderful World of Wrigglers, Food Works, 64 Main Street, Montpelier, VT 05602 (802) 223-1515. This is a curriculum guide that explores the relationship between earthworms, soil, and ecological sustainability. Includes instructions for building an earthworm compost bin, studying worm anatomy and behavior, and linking activities to environmental education concepts.

Worm Acres, Insect Lore, P.O. Box 1535, 132 South Beech, Shafter, CA 93263 (800) 548-3284. Complete vermicomposting kit including bin, certificate for worms, starter compost bedding, airflow filter, sprayer, instructions, and study guide.

Wormania!, Flower Press, 10332 Shaver Road, Kalamazoo, MI 49024 (616) 327-0108. Twenty-six minute video captures the lifestyle and life cycle of worms, explains their role in soil ecology, and defines the steps to take in vermicomposting. Video can be accompanied by the *Wormania* teaching guide.

Worms Eat My Garbage, Flower Press, 10332 Shaver Road, Kalamazoo, MI 49024 (616) 327-0108. How-to book to set up and maintain a worm composting system with specific guidelines on the construction of worm bins and the care and feeding of worms.

Worms Eat Our Garbage, Flower Press, 10332 Shaver Road, Kalamazoo, MI 49024 (616) 327-0108. Subtitled "Classroom Activities for a Better Environment," this two hundred fourteen page curriculum guide and activity book offers classroom activities related to worms and vermicomposting.

Worms, Worms, and Even More Worms, A Vermicomposting Guide for Teachers, Integrated Waste Management Board, 8800 Cal Center Drive, Sacramento, CA 95826 (916) 255-2385. The basics of vermicomposting are explored in detail and followed by classroom and lab activities, case studies, and several appendices including plans to build a worm bin and suppliers of worm bins and worms.

Yes I Can!, Steel Recycling Institute, 680 Andersen Drive, Pittsburgh, PA 15220 (800) 876-7274. Accompanied by a K-3 teacher's guide, this fifteen-minute video tells the story of a juice can, bottle, and newspaper that undergo the process of being purchased, used, thrown away, found, and ultimately recycled into new products.

The following list of software focuses on integrated waste management topics.

Choices, Choices: Kids and the Environment, Mac/Win, Tom Snyder Productions, 80 Coolidge Hill Road, Watertown, MA 02172 (800) 342-0236.

Decisions, Decisions: the Environment, Mac/Win, Tom Snyder Productions, 80 Coolidge Hill Road, Watertown, MA 02172 (800) 342-0236.

EarthAware, Mac/Win, EnviroAccount Software, 605 Sunset Court, Davis, CA 95616.

Earth Explorer, Mac/Win, Sunburst Communications, Inc., 101 Castleton Street, P.O. Box 100, Pleasantville, NY 10570 (800) 321-7511.

EcoExpert Environmental Science Series (Case of the Polluted Playground), IBM, Texas Learning Technology Group, P.O. Box 2947, Austin, TX 78768 (800) 580-8584.

EcoExpert Environmental Science Series (Fuel Site Quandry), IBM, Texas Learning Technology Group, P.O. Box 2947, Austin, TX 78768-2947 (800) 580-8584.

Garbage Tale: An Environmental Adventure, laserdisc, SVE/Churchill Media, 6677 North Northwest Highway, Chicago, IL 60631-1304 (800) 829-1900.

Introduction to General Environmental Studies: Waste, Mac/IBM, COMPress. Available from Education Software Institute, 4213 South 94th Street, Omaha, NE 68127 (800) 955-5570.

Kids' Network: Too Much Trash?, Mac/Win, National Geographic Society, Educational Media Division, P.O. Box 98018, Washington, DC 20090 (800) 368-2728.

Our Environment, Mac/Win, Sunburst Communications, Inc., 101 Castleton Street, P.O. Box 100, Pleasantville, NY 10570 (800) 321-7511.

Roscoe's Totally Cycled World, Mac/Win, Steel Recycling Institute, 680 Andersen Drive, Pittsburgh, PA 15220 (800) 876-7274.

Science and the Environment, Mac/Win, DOS, UNIX, Environmental Media Corporation, P.O. Box 99, Beaufort, SC 29901 (800) 368-3382.

SimEarth Classic, Mac/Win, Maxis, 2121 North California Blvd., Suite #600, Walnut Creek, CA 94596 (510) 933-5630.

Think Earth/Captain Energy and His EcoAdventures! Mac/Win, MultiMedia Associates. Available from Education Software Institute, 4213 South 94th Street, Omaha, NE 68127 (800) 955-5570.

Trash Goes to School, IBM, Cornell Cooperative Extension, Resource Center, 7 Business & Technology Park, Cornell University, Ithaca, NY 14850 (607) 255-2080.

Internet Addresses

The following on-line addresses offer information concerning integrated waste management issues and projects.

Composting:

California Integrated Waste Management Board
www.ciwmb.ca.gov/organics/

Composting
www.msue.msu.edu/msue/imp/mod02/01500589.html

Composting for Home Gardens
www.ces.ncsu.edu/hil/hil-8100.html

Concordia Student Union
www.cug.concordia.ca/~csu/handbook/enviro/composting.html

Cornell University/ Cornell Composting
www.cals.cornell.edu/dept/compost/

Cornell Composting/ Composting in Schools
The Cornell Waste Management Institute, Cornell Center for the Environment
www.cfe.cornell.edu/compost/schools.html

Enviro Care of America
www.envirocare.net/simple.html

Home Composting the Easy Way
www.zapcom.net/~compost/

Michigan State University Extension/ Backyard Composting
www.gvrd.bc.ca/waste/bro/swbckyr.html

Missouri Department of Natural Resources
www.fsinfo.cs.uni-sb.de/~fritsch/Papers/env/compost/compost.html

North Carolina Cooperative Extension Service (*Composting for Home Gardens*)
www.ces.ncsu.edu/hil/hil-8100.html

Planet Natural
www.planetnatural.com/composting.html

Rot Web
www.net.indra.com/~topsoil/Compost_Menu.html

The Compost Recipe
www.gov.nb.ca/environm/comucate/compost/nurep.htm

Veggies Unite!/ What Not to Compost
www.vegweb.com/composting/what-not.shtml

The Compost Resource Page
www.oldgrowth.org/compost/

The Master Composter
www.mastercomposter.com

Environmental Education:

California Department of Education, Office of Environmental Education
www.cde.ca.gov/cilbranch/oeel/

California Environmental Education Resource Guide
www.cde.ca.gov/cilbranch/oeel/ceerg/cover.html

Internet Addresses

E Patrol, E Patrol Foundation
www.sprint.com/epatrol/

Educational Resources Information Center / Clearinghouse for
Science, Mathematics, and Environmental Education (CSMEE)
www.ericse.org

EE Link
www.eelink.net/html/easy_search.html

ENC Resource Finder, Eisenhower National Clearinghouse
www.enc.org

Environmental Education and Training Partnership (EETAP)
www.eetap.org

Environmental Literacy Council
www.enviroliteracy.org

Generation Earth
www.generationearth.com

Harbinger California Environmental Directory
www.nceet.snre.umich.edu/HFED.html

National Consortium for Environmental Education and Training
www.nceet.snre.umich.edu/nceet.html

North American Association of Environmental Education
www.naaee.org

Searching SEEK (Sharing Environmental Education Knowledge)
www.seek.state.mn.us/search/search.cfm/

The Environmental Education Network
www.envirolink.org/enviroed/

The Global Thinking Project, Georgia State University
www.teaparty.terc.edu/comweb/globalthinking/home/glothinking.htm

Recycling:

40 Tips to Go Green
www.ceres.ca.gov/ceres/calweb/40tips.html

America Recycles Day
www.americarecyclesday.org/ard2/index.asp

California Inregrated Waste Management Board
www.ciwmb.ca.gov/recycle/

Can Manufacturers Institute
www.cancentral.com

Department of Conservation: California Beverage Container
Recycling and Litter Reduction Act
www.consrv.ca.gov/dor/index.htm

Environmental Systems of America (Recycling Factoids)
www.envirosystemsinc.com/factoids.html

Environmental Web Directory
www.webdirectory.com/Recycling/

Global Recycling Network
www.grn.com/

GreenTeam of San Jose
www.greenteam.com/faq.html

Internet Addresses

Mississippi State University: Paper Recycling
www.ext.msstate.edu/pubs/pub1670.htm

Natural Resource Defense Council (Garbage and Recycling)
www.mail.igc.apc.org/nrdc/bkgrd/gaten.html

Pennsylvania Used Oil Recycling Information Center
www.dep.state.pa.us

Popsi Environmental Education Program
www.popsi.com

Recycle City, Environmental Protection Agency Region 9
www.epa.gov/region09/recyclecity/

Recycling
www.iit.edu/~smile/bi9015.html

Recycling Site in the United Kingdom
www.enviroweb.org/greenaction/gec/recycling.html

Recycling Slide Show, Recycle America
www.crest.org/environment/gotwh/general/recycle-slides/index.html

Recycler's World
www.recycle.net/

Ring Leader Recycling
ITW-Hi-cone
www.ringleader.com/menu/program.html

Sappi Fine Paper of North America
www.warren-idea-exchange.com/graphic/e4a.html

Steel Recycling Institute
www.recycle-steel.org

Think Earth
www.edspecialists.com

TreePeople: Generation Earth Program
www.generationearth.com

United States Environmental Protection Agency
www.epa.gov/epaoswer/non-hw/recycle/index.htm

Wisconsin Department of Natural Resources/ EE for Kids
www.dnr.state.wi.us/eeek

Youth Recycling
www.unesco.org/youth/recycle.htm

Source Reduction and Landfills:

Aseptic Packaging Council
www.aseptic.org

BFI Company/ Landfills
www.bfi.com/landfill/index.html

County of Stanislaus, the *Citizen's 3 R's of Garbage*
www.co.stanislaus.ca.us/er/3rsgarb.htm

Conservation Education Program
www.fs.fed.us/outdoors/nrce/welcome.htm

Do It Yourself: Stop Junk Mail and Phone Calls
www.obviously.com/junkmail/

Environmental Industry: *Professionally Managed Landfills: a Vital Environmental Resource*
www.envasns.org/eii/garbage/landfills/landfills.htm

Internet Addresses

EPA Resource Guide of Solid Waste Educational Materials
US Environmental Protection Agency
www.epa.gov/epaoswer/general/bibliogr/educatn.htm

Flexible Packaging Educational Foundation
www.flexpack.org

Guideline for Environmentally Responsible Packaging
www.corp.hp.com/publish/talkpkg/enviro/environm.htm

HP Externally Packaging Web Site Guideline for Environmentally Responsible Packaging
www.corp.hp.com/publish/talkpkg/enviro/environm.htm

It's Your Choice
www.cygnus-group.com/packaging/Flex_Pkging.html

Let's Talk Trash
www.herald-sun.com/cchamber/magz/396/bt39602.html

Michigan State University Extension, *Waste Reduction – For Home and Office*
www.msue.msu.edu/msue/imp/mod02/01500569.html

Newton's Apple: Garbage
KTCA Twin Cities Public Television/NSTA
www.ktca.org/newtons/11/garbage.html

Plastic Bag Association/Plastic Bag website
www.plasticbag.com

State of Iowa/ Energy Education
www.state.ia.us/government/dnr/organiza/egd/chap7.htm

The Problems of Landfilling Waste
www.surreycc.gov.uk/planning/recycling/recyc3.html

US Department of Interior
The Natural Resources Library
www.ios.doi.gov/nrl/

US EPA Office of Solid Waste: Safer Disposal for Solid Waste - The Federal Regulations for Landfills
www.epa.gov/epaoswer/non-hw/muncpl/safedis.htm

US EPA Office of Solid Waste
www.epa.gov/osw/students.htm

Wisconsin Department of Natural Resources/EEK: *What a Waste?* and *My Ton of Trash*
www.dnr.state.wi.us/org/caer/ce/eeek/earth/waste.htm
www.dnr.state.wi.us/org/caer/ce/eeek/teacher/tontrash.htm

Vermicomposting:

Alameda County Waste Management Authority and Alameda County Source Reduction and Recycling (Vermicomposting)
www.stopwaste.org/wormcomp.htm

Alaska's Can-O-Worms
www.can-o-worms-alaska.net/

Biological HomeGrown Farms
www.freeyellow.com/members/biohomegf/index.html

California Integrated Waste Management Board
www.ciwmb.ca.gov/organics/worms/wrmsuply.htm
www.ciwmb.ca.gov/schools/classroom/worms.htm

Canada's Office of Urban Agriculture/City Farmer
www.cityfarmer.org/

Internet Addresses

Classroom Vermicomposting

www.interware.net/~levine/worms/

Happy D Ranch worm farm

www.happydranch.com/whyverm.html

Keith's Red Worm Ranchos

www.swimall.com/swimall/newpage13.htm

Lake County Worm Farm, Inc.

www.pacific.net/~wormfarm/

Missouri Department of Natural Resources Solid Waste Program

www.dnr.state.mo.us/deq/swmp/worm1.htm

New Jersey Online

www.nj.com/yucky/worm/

Progressive Organic Solutions

www.vermicentral.com/

Sale of Worms and Worm Castings

www.worm-publications.com/growers/oasiswfs.html

Squirmy Wormz Farm, Australia

www.dragnet.com.au/~lindah/worms.html

University of Nebraska Cooperative Extension

www.ianr.unl.edu/ianr/lanco/enviro/pest/factsheets/vermich.html

US Worms (Mr. Ken's World)

www.deepsummer.com/usworms/links/

VermiCo's Casting Call

www.vermico.com/news.html

Vermiculture, North Carolina State University

www2.ncsu.edu/bae/programs/extension/publicat/wqwm/ebae202_94.html

Wiggling N Vermicomposting

www.home.att.net/~tnoland/

Worm Digest

www.wormdigest.org/

"Worms for Home Composting"

www.poulson.force9.co.uk/worms/

Worm Woman's Web Site

www.wormwoman.com/frameindex.html

Worm World

www.globalclassroom.org/worms.html

Waste and Resource Management:

American Petroleum Institute

www.api.org/tchrmaterial.htm

California Integrated Waste Management Board

www.ciwmb.ca.gov

CERES (California Environmental Resources Evaluation System)

ceres.ca.gov/education/

US Department of the Interior, Natural Resources Library

www.ios.doi.gov/nrl/

US Environmental Protection Agency

www.epa.gov/